The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

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The Farmer's Journal.

This month we present our readers with an extra quantity of reading matter, the greater portion of which has been selected with the special view of being useful at this season of the year.

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The Board of Agriculture is about to distribute the Seeds selected by the Commissioners at Paris, at the Great Exhibition, among those who will take the trouble of cultivating them carefully, and reporting the results. Each recipient of Seeds is expected at the end of the season to answer the following questions :—

1. What seed ?
2. Quantity of seed sown ?
3. Quantity of land ?
4. Nature of the soil ?
5. Land under-drained or only surface drained ?
6. Nature of the crop last year ?
7. The cultivation for this experiment ?
8. Has manure been applied ?
9. In what quantity, and of what description ?
10. Date of sowing ?
11. Appearance of crop during progress to maturity ?
12. Date of harvesting ?
13. Yield of crop in grain and straw ?
14. With any other interesting observations.

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A Correspondent wishes to know, where good Hereford stock can be purchased. Any one desirous of selling, will please communicate with us respecting terms.

Annual Show of Horses.

The Montreal Agricultural Society held its Annual Show of Horses on 29th April, in the Haymarket Square. There were no prizes awarded ; but the premiums given at the Annual County Cattle Show, held in the fall, will be restricted to the Horses brought up at this Exhibition. The animals on the ground were not numerous, but some of these were of the very best kind. One in particular—a draught horse—attracted general attention.

The Bulls belonging to the Society were also on the ground and were much commended.

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Montreal County Agricultural Society.

Mr. Smith, the Secretary-Treasurer, acknowledges, with many thanks, the receipt of the handsome sum of $25 from J. Hutchison, Esq., St. Laurent, as his subscription for the current year.

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Farmer's Journal.

We have discontinued sending the Journal for the present month to those who have not remitted in advance according to our terms ; but in order to supply such as may wish to continue, and may have inadvertently omitted to forward their subscriptions, we have printed off an extra number of copies, which will be transmitted on receipt of the subscriptions.

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To some of the leading Agricultural Papers published in the United States and Britain we address copies of the present number of the Journal, and will be glad to exchange with them.

Mutual Fire Insurance Co.—This company, whose Head Quarters are in Montreal but whose operations extend throughout the Province, is, we are glad to learn, in a very flourishing condition. By limiting their risks wholly to Farmer's houses, barns and other isolated properties, and avoiding towns and villages, they are enabled to insure at the remarkably low rate of 5s. per £100 for three years. It says much both for the management of the Company and the prudence of our rural population, that already £200,000 worth of property has been insured. Still there are a great many remaining, who ought to avail themselves of the security which this company affords them in case of being subjected to that too often recurring calamity—Fire.

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Trefolium Incarnatum or Crimson Clover.

[The communication of "Agricola," on this subject, having arrived rather late, he will excuse us for preparing the following condensed abstract, that our English readers may have the benefit of his remarks in the present month. The letter will appear in full in our French issue.]

To the Editor of the Farmer's Journal.

Sir,—Allow me to call the attention of your readers to an article in your April number on the *Trefolium Incarnatum*. According to the author of the Prize Essay, quoted in your last number, this is a new clover. It has, however, been long cultivated in France, especially in the south-western provinces of that Empire, and it now receives more attention there than formerly. It was

introduced into England as early as 1804, and is probably still cultivated there. To us in Canada, however, it matters little if a member of the Highland Society of Scotland has made a novelty of a plant well known in France and England; if the crop is new to us, and likely to be advantageous, let us introduce it at once.

It appears to me that this plant, on account of its very rapid growth, will become very profitable in Canada, both for green fodder and for hay; although, according to the French agriculturists, it is a little inferior as fodder to the common red clover, (*T. Pratense*).

The Crimson Clover may be sown with grass seed in spring, and will be ready to cut in July, nor will it interfere with the growth of the permanent grass. It will also be useful to cover spots in which the grass may have been winter killed. It must be observed that it is an annual plant, and perishes in autumn, but if sown on the stubble in September or October, it is sufficiently hardy to endure the most severe winter and may be cut in the following June. Almost any soil which has carried grain crops will produce the Crimson Clover.

I may add that the Crimson Clover figured in the Exhibition at Paris, and is classed in the report of the jury with red clover, lucerne, and other plants too well known to require any special mention in connection with agricultural improvement.

I am, &c.

AGRICOLA.

St. Joachim, April 15.

[Our correspondent is quite right in stating that the Crimson Clover has long been known in France and England; and perhaps the essayist quoted in our last number only called it new as being so to Scottish farmers. Notices of its culture in England and Scotland will be found in Sproule's Practical Agriculture, and Stephen's Farmer's Guide; and from the latter it would seem that it has been known in Scoland at least since 1837. Stephens also states that a mere harrowing of the surface of stubble land forms sufficient preparation for it without ploughing, and that it suffers in Scotland, when sown in autumn, from the winter and spring frosts. It succeeds well in the South of England, especially on the chalk soils, so that it would probably thrive on the drier limestone soils of this province. It may be very useful here in filling up head ridges and waste spots, in providing a rapid growth of green fodder for summer and autumn, and in serving as a substitute for green crops on fields which the farmer cannot find time to cultivate in roots. It is said to be well suited to this last use in consequence of its power of choking weeds, and yielding when ploughed up much organic matter to the soil. We trust that experiments will be made with it, and that our correspondents will give us information of the results.—ED. F. J.]

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Experiments on Manures.

At this season it is not to be supposed that even the most intelligent agriculturists can have much time for "book-farming," except perhaps to consult a good work, or turn over a volume of an agricultural journal for a hint as to any practical difficulty in the spring work. Yet we should like to occupy a half hour in the noon-day heat, or in the evening after work is over, with a few remarks on scientific farming in its relation to agricultural experiments, and especially to experiments on manures.

Many farmers have made up their minds to try in the present spring new methods which they have found in their reading during winter, or which have occurred to themselves. More are trusting to the success of methods approved by experience, and some are perplexed by the failure in late years of means previously successful. Now in reference to these several states of mind, the science of agriculture teaches the following important truths: 1. Experiments should not be made blindly without knowledge of the materials employed, or the circumstances in which they are to act. 2. A manure or a method quite successful on some other person's farm may be quite useless on yours. 3. A manure or method may be very advantageous for a time, and then become useless even on the same farm.

1. For an instance of the first of these truths, we may refer to the experiments of Messrs. Lawes and Gilbert, in England, criticised by Liebig in his late work, "Principles of Agricultural Chemistry." These gentlemen supposed in the first place, (in which supposition they were quite wrong,) that chemists maintained that potash, bone earth, and the other substances found in the *ashes* of wheat, are the only things that require to be added to the soil to increase the crop; or, in other words, that in any soil mineral manures containing the ingredients of the ashes of wheat, are alone sufficient to maintain and increase the production of this grain, without paying any attention to the materials of a different character, (nitrogenised organic substances,) which have been supposed to be supplied by the richer parts of animal manures. Now, if any one had really held this one-sided theory, it would have been very useful to have disproved it by experiment. But to have given the experiment a fair trial, it should have been made on land incapable without manure of producing wheat. This was not attended to. A spot was chosen which could produce, as the experiments showed, a number of crops without any manure, and on this land while the plots manured with mineral manures produced hardly anything more than the unmanured, those supplied with nitrogenised manures showed a marked improvement. The conclusion deduced was that mineral manures are useless, whereas the only thing really proved was that the land experimented on contained enough of the mineral ingredients of wheat to serve several crops. Thus this costly series of experiments, extending over ten years, really gave no new information, but only served to mislead the experimenters.

This great blunder, however, well illustrates the general truth in reference to *special* manures of all kinds, as distinguished from those barn yard manures containing the materials originally obtained from the soil itself, which we are always safe in preserving and applying at almost any cost of time and labour. Every cultivated plant requires from the soil a number of ingredients, which the chemist has ascertained with respect to all the more important plants. A soil capable of producing any plant without manure must have *all* the ingredients required, and a soil barren, naturally or run-out by cropping, must want or have lost one or more of those ingredients; and in such cases the safe course is to ascertain by reference to good works on agriculture what manures afford in the cheapest form the several materials required by the particular crop, and to apply these on a limited scale to portions of the same soil, and carefully note the results. Such experiments are sure to be profitable, but care must be taken not to extend their results to other soils, or to suppose that the same manure will always be successful on the same soil.

2. This leads to our second principle, that special circumstances must always be considered in introducing methods or manures recommended by others. A farmer living on a soil very deficient in lime, applies a moderate dressing and the results are extraordinary, because previously the crops were stinted of that material. He announces the great effects, and another farmer cultivating

a soil in which nearly every pebble is limestone, applies lime, but without the slightest beneficial effect, and straight way he condems book-farming as leading to such unprofitable expenditure. An inland farmer uses salt with advantage, and another on the sea coast where every sea wind salts his fields, tries it and finds it worse than useless. This want of consideration of circumstances vitiates a great part of the information contained in the correspondence of agricultural journals. A little scientific knowledge, such as an intelligent young farmer could easily obtain in a winter's course of lectures, would enable him to discriminate in such matters; but where he cannot do this, it is safest to follow such recommendations at first only on a small scale.

3. A mineral or other manure very useful at first, may ultimately become useless, or if too often resorted to, may even exhaust the land. In some American soils gypsum is very deficient, and that mineral manure was consequently found to produce very surprising results, chiefly because it supplied to crops sulphuric acid, a substance which they need and could not previously obtain in sufficient quantity. But, after a few applications, gypsum ceased to do good, and began to be cried down as a mere "stimulant." The truth was that for the time the land had enough of it, and just because it had enough required more of other manures. Precisely the same results have followed the application of lime in many parts of the world. The land over dosed with this one manure, became destitute of others equally necessary, and this all the more rapidly that lime had been applied, not only on account of the decomposing effect of lime on the manures in the soil, but from a more general cause, very easily explained. Let us suppose that any cultivated crop requires from the soil equal quantities of three substances, which we may call A, B and C, and that the soil of a field is capable of supplying in one year 1 A, 2 B, 3 C, the plant requiring equal quantities can only avail itself of 1 A, 1 B, 1 C, while 1 B and 2 C remain as surplus or go to waste. Let the farmer now apply annually 1 A to the field as manure, the plant now takes 2 A, 2 B, 2 C, and the crop may be doubled. But it is evident that the increased crop exhausts B and C more rapidly than the previous small crop. Hence perhaps in a few years the proportions in the soil are reversed, and it can yield only 1 B, and 2 A, and 2 C to the crops. The crop will now fall to its originally small amount, and it is B that must be added to supply this new deficiency; any quantity of A doing no good when applied. This simple consideration explains many results otherwise puzzling, and we may add that the only manures which really contain the whole A B C of the food of plants, are those afforded by the liquid and solid products of the stable, and animal and vegetable substances of similar composition. Other manures are in their nature special and partial, and though their application achieves some of the greatest and most profitable triumphs of scientific agriculture, there misapplication through ignorance of the chemical composition of crops, soils, and manures, does very much to bring the whole scientific theory of agriculture into most undeserved contempt with practical men. It is hard that science should bear the blame of errors which arise simply from the want of it, yet this must be the case until farmers and agricultural writers familiarise themselves so far with the principles of chemistry as to be able to understand the meaning of the experiments which they make, and the results at which they arrive.

The bearing which we wish all this to have on the spring work, is to encourage experiments, especially with manures; but these experiments on a moderate scale and attended to in all their circumstances and results, so as to afford real information. We also wish to shew that the basis of all sound experiment of this kind must be the most careful economy of the manures produced from the crops which the soil has afforded, that nothing can in the present state of our knowledge make up for neglect of these, and that other manures, especially mineral manures, though capable of effecting surprising results, and even of rendering the most barren soils fertile; demand on the part of the farmer some scientific knowledge, and much practical good sense in order to realise their full benefits. Lastly, we beg leave to say, that we shall at all times be happy to answer to the best of our ability, questions relating to these subjects; our only fee for advice being payment of postage.

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Root Crops.

It should be thoroughly understood, and the sooner the better, that in climates such as that of Canada, good and profitable farming can be maintained only by a rotation embracing in addition to the potatoe a large proportion of other root crops, such as the turnip, carrot, mangold wurtzel, &c. Attention to such crops removes the necessity of fallowing, and both theory and experience shew that, in most cases, fallowing in this climate is a most wasteful process. By the culture of these crops, the soil is sufficiently exposed to the renovating influence of the air, manures are thoroughly incorporated with it, and brought into that state which is best suited to the nutrition of grain crops, and especially of wheat, and the increase of weeds is effectually checked. These are, however, small considerations in comparison with the value of the root crops themselves. By means of these, hay is economised, working cattle are more easily kept in good condition, cattle can be fattened in winter, and milch kine can be kept in a productive state throughout the season. In addition to all this, it is well ascertained that the manure produced by the cattle well fed on roots, is both more abundant and more valuable than that of cattle half starved on dry food alone. This as well as the necessity of attention to collecting other manures than those of the stable, and the promotion of a proper rotation in connection with these crops, renders them not only of great value in themselves, but the key-stone of all good tillage agriculture.

Root crops require time and labour, but these are well repaid, and even if their culture should require the farmer to restrict his labours to a smaller surface, he will find more profit in cultivating a small farm with their aid than a larger farm without them. Some of them have also the reputation of being uncertain; but it can, we think, be shown that even those green crops considered the most precarious, can, by proper means be rendered certain.

We invite the earnest attention of all agriculturists to this subject, and in order to contribute our mite toward the extension of the culture of root crops in the present summer, we propose to give a series of articles on the best methods of culture approved by experience in this and similar climates, and we shall endeavour to insert these just as the season arrives for attending to the different operations to which our articles will relate.

In the present article, we shall direct attention to the most profitable root crops, their best varieties, and the methods of manuring and sowing, and in doing so, we shall avail ourselves largely of the informa-

tion contained in a pamphlet by Judge Peters, of Prince Edward Island, a colony in which much attention has been bestowed on this branch of husbandry.

The Turnip—best varieties and sowing. No fewer than forty-six varieties of the turnip are enumerated, of which, however, only a few deserve the attention of the farmer. The *Swedish*, of which the purple-top is the best variety, is most important for a principal crop, as it is less injured than others by the fly and caterpillar, keeps better in winter, and yields a very large crop. Thirty to thirty-five tons per acre are considered a good crop in Britain. The *yellow bullock* or *Aberdeen yellow* and the *yellow tankard* rank next for winter keeping. The crop is smaller than that of Swedish, and the roots do not keep so long. These turnips, however, require less time to grow, and may therefore, be sown much later than the Swedes. The *white* and *red globe* are of large size and grow rapidly, and are as nutritive as Swedes in autumn and early winter, but become soft and of little value toward spring. It is the best policy to sow Swedes largely, and to have a proportion of the others for feeding in early winter. They also serve to fill up gaps caused by the depredations of the fly in the rows of Swedes.

Long or fresh stable manure does not suit turnips. They thrive better with short manure, compost, door cleanings, coal or wood ashes, bone dust, guano, or mixtures of these, and in addition to the manure ploughed in, a little wood ashes or guano sown along the tops of the drills with the seed is of great value in giving a vigorous start. The following directions from Judge Peters, give the best colonial practice that we know in preparing the ground and sowing :—

"Turnips are generally sown in that part of the rotation which closes one course and commences another; and in this island it will in general be found convenient to sow them after oats sown on ley. On new-burnt lands their are few weeds, and excellent crops may be raised with little labour, by merely scattering the seed and hoeing it in; but with this exception, they should always be sown in drills, under which system three acres can be cultivated with less labor than one acre broad cast. The land intended for them should be well and deeply ploughed in autumn, and cross ploughed in spring, then harrowed and rolled to break the lumps. If the land is foul with couch, have it well cleaned, or the turnip crop will be a failure, or cost more to keep clean than would have cleaned the land before they were sown. Next open the drills: thirty inches apart is the best distance for ordinary culture, as it gives room for the plough and horse hoe to work freely between the drills without injuring the plants. If a prize is wanted, perhaps twenty-seven inches will give a somewhat larger yield, but they will be more troublesome to clean; and I am convinced that farmers, generally, will find thirty inches between the most convenient distance. When the drills are opened, then cart in your manure, which should be short, and make it in small piles, so that it can be regularly spread in the drills; by making the piles so that they will spread into the three drills in which the horse walks and the cart wheels run, you will spread it more evenly, and with less labor, than from larger piles, in which I often see it deposited. As soon as the manure is spread in the drills, and before the sun can dry it, split the drills with the plough, which will cover the manure and make a ridgelet over it, then run a light roller length ways along the drills, so as to flatten them on the top, and drill in the seed at once; it is very important that it should be done as soon as the drills are raised, for the ground is then fresh and damp: whereas, if you leave it, the tops of the drills get dry, and the seed is longer coming up, and the plants grow more slowly. I frequently see persons waiting for days, until the whole of the land is prepared, before they sow. This is a very bad practice, because, not only do the drills become dry, but the weeds begin to shoot before the seed is sown; and when the plant comes up, it finds the weeds up before it, and is consequently smothered, and is much more difficult to hoe and clean. The least you can do for the turnip is to give it fair play, and a fair start with its numerous weedy competitors; and, therefore, make it a rule to sow in the evening, or, at furthest, the next morning, every drill that has been dunged and covered during the day.

"Some spread the manure broadcast, and plough it in with the second ploughing, and raise fair crops; but by putting it in the drills, the whole strength of the manure is given to the roots of the turnip, and therefore, must promote its early growth more than when spread over a large space of ground. When the manure is ploughed in broadcast, I think it should be done in the fall; a method which seems to produce excellent crops, and saves labor in the spring, when time is of most value to the farmer."

The *fly* will usually be prevented from destroying the crop by the following precautions: 1. Sow *not less than three or four pounds* of seed to the acre. This will give enough both for fly and farmer, and will enable you in thinning to select the strongest plants. 2. Sow not earlier than the 1st of June. 3. Sow as you prepare the ground, before the *seed furrow is dried up*, and if possible immediately before rain. 4. A little guano scattered over the drills is very useful, and if some seed of the white turnip be sown over the ground, it will attract the flies from the swedes. 5. If notwithstanding these precautions gaps are made in the rows, sow in them white turnips or have a seed bed of the yellow globe mangold wurtzel, and plant them out in the gaps. They will grow and thrive even in dry weather. 6. The last resort is a second sowing, but with the above precautions this will seldom be necessary.

The carrot, its varieties manures, &c. —The culture of this root is usually pursued on a small scale only, but its high nutritive power, its certainty and good keeping properties, as well as the large crops that it yields, make it deserving of more extended culture wherever there are deep and light soils, or they can be deepened by ploughing or subsoiling. The safest and most productive varieties are the long orange, red Altringham and white Belgian. On the culture of the carrot, Judge Peters remarks:

"Carrots do not require the land to be so rich, but they want it very fine and deep. They seem to succeed best after potatoes; probably because the ground is then light and friable. After the land is cross ploughed, harrowed and rolled in the spring, it should be thrown into ridgelets, making them as high as you can, so as to give the plant as great a depth of the soil to grow in as possible; eighteen inches is width enough between the drills, but unless the land is very clean, thirty inches will be found the most convenient distance. Roll the drills, and drill the seed, while the earth is fresh and moist, in the same way as turnips. If you sow imported seed, you will require four or five pounds to the acre, and then not be sure of the crop; but if home raised seed is used, one and a half pounds per acre will be sufficient, as almost every seed grows; at least I have found it so. *Eight or ten days before sowing, I mix the seed with fine sand, carefully sifted so that no stones or lumps are left to choke the drill, and keep it moistened with water in a warm room, stirring it up every day.* When about to sow, I spread it in the sun for an hour or two, to dry, taking care not to dry it too much, which would injure the seed. I then place a guage, large enough to let a large buck-shot through, in my turnip drill (one of Birnie's), and drill the seed in the same manner as turnips. Seed thus treated is generally up in three or four days, and the plants have a fair start with the weeds. They should be sown in May, or early in June."

Carrots require the same manures with turnips, They have few enemies, and may

be considered a sure crop. They will yield from three to four hundred bushels per acre. The method of preparing the seed recommended above is of great importance, as many failures arise from the slow vegetation of the seed when unprepared.

The *mangold wurtzel* ranks very high as a root for feeding cattle, especially milch cows, to whose milk it communicates no disagreeable flavour. It keeps even better than the Swedish turnip, and is more valuable in spring than in autumn. Indeed, this and other beets should not be fed largely to cattle in early winter, as they contain, until they have been a few months in store, an acrid principle which is injurious. The principal varieties are the long red, long yellow, and globe orange or yellow globe. The long varieties thrive best on deep moist soils, the globe variety is more suitable for dry and shallow soils Manure as for Swedeing turnips ; sow as early as possible ; prepare the seed like that of the carrot and sow by hand, but not thickly as the plants should be thinned to fourteen inches asunder. The sugar beet is very similar in its qualities to the mangold wurtzel and is more nutritive, but of smaller size.

The *parsnip* deserves culture as a farm crop, on account of its nutritive properties, and because it may be left in the ground and dug in spring when other roots are becoming scarce. Culture much the same with that of the turnip and carrot. It prefers a deep moist soil. Sow early, and prepare the seed in the same manner with carrot seed.

In conclusion, we again urge every farmer to collect every kind of suitable manure, and enlarge as far as possible his breadth of green crop, and not to content himself with potatoes and a few turnips, but to devote a large surface to turnips, carrots, and mangold wurtzels. We hope to notice in future articles, the subjects of thinning, cleaning, pulling, and storing ; and, in the mean time, shall be glad to answer any questions that may occur to our readers, or to receive any additional hints.

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Fruit Trees.

This is the season for attention to grafting and transplanting, and the best season for pruning is approaching. The following hints on these subjects may therefore be acceptable, especially to young farmers, who should, in the planting of orchards and ornamental trees, be laying the foundation of rich crops of fruit and of the future beauty of their home-steads.

In planting fruit trees it is of the first importance to have a suitable soil and exposure. The apple prefers loams, or sandy loams. The pear does well in similar soils. The plum does not object to a stiff clay, and will not grow luxuriantly in some of the lighter soils, in which the apple flourishes. The cherry, on the contrary, prefers a light dry soil. Much can be done, however, by proper drainage and manuring, to render all ordinary soils suitable to these and other fruit trees. A good exposure should be selected ; and where there is not natural shelter, belts or rows of trees should be planted on the sides exposed to the cold winds. Cherry trees suit well for this purpose ; so do spruces. The butter-nut tree has also been recommended ; and, indeed, any rapidly-growing tree, suitable to the soil, will serve the purpose. The ground should be well tilled, drained, and manured. It is folly to plant valuable trees in a poor, cold, undrained soil ; and it is folly to plant worthless or inferior trees at all, when good sorts can be procured.

Trees should be lifted with care, so as not to injure the roots ; as these are all required to nourish the tree. They should be planted with like care—spreading out the roots in a natural form, and trimming off some of the young shoots from the top. Holes for planting should be made both larger and deeper than is absolutely necessary ; and the surface-soil, with compost or rotted manure, should be turned into the bottom of the hole. If the soil be deep and dry, the tree may be set pretty deeply ; if cold and shallow, the tree should be nearer the surface. The earth should be carefully pressed around the tree ; and a little straw, or a few sods or some grass, laid on the surface, to preserve the moisture of the soil. Bones, parings of hides and horns, hair, and similar animal matters, are excellent and permanent manures for young trees. After planting, the ground should be kept clean, and regularly manured with old compost, ashes, ditch cleanings, or animal matters ; and on no account must it be allowed to become covered with a tough grass sward, especially in the case of apple trees. Trees are often seen growing in old grass sward, regularly mowed, and seldom or never manured. Such trees must eventually become unproductive and diseased. Trees extract large quantities of matter from the soil, and require plentiful manuring, especially when another crop is being taken from the same soil. Hence it is a good plan to plant orchards very open, and to cultivate and manure the ground in regular rotation ; taking care not to damage the roots unnecessarily, and not to leave the land long in grass. The apple is much benefited by frequent stirring of the soil ;—stone fruits require less of this, and are more apt to be injured by wounds inflicted on their roots.

When is is desirable to plant out trees before the ground is properly prepared, or when it cannot be tended as it requires, seedlings or slips may be planted out, instead of grafted trees ; and such of them as become strong and vigorous, may afterwards be grafted with good sorts. In like manner, farmers who have young trees of wild or inferior kinds, my have them headed down and grafted upon ;—if skilfully done, the grafts soon come into bearing. In planting, abundance of space should be left for air and light. When early produce is desired, the trees may be planted at half the proper distance apart, and each alternate tree may be forced into early bearing, by free pruning. These trees may afterwards be cut out, when they interfere with the others.

Pruning is a most important part of orchard management. Trees should be kept open, and trained symmetrically, so as not to permit the branches to interfere with each other, and to present the greatest possible surface to air and light. There are various modes of pruning, but all depend on this principle ; and wall, espalier, round, oval, or conical training may be preferred, just as one or other may appear, in the circumstances or situation, to be more or less adapted to promote access of air and light. The perfection of pruning, is to study the growth of the tree, and cut out as early as possible every twig that interferes with the intended plan, or with the symmetry of the whole. When it becomes necessary to cut out large branches, more or less permanent injury to the tree is almost unavoidable. The cutting off a large branch, is somewhat analogous to the amputation of a limb in an animal, and more or less deranges the circulation of the whole system. Large limbs should be pruned in summer ; small twigs may be freely cut in spring. Experience has shewn, that the dangers of spring pruning, in the case of considerable limbs, are much greater in stone fruits, than in apples and pears.

There has been much controversy as to the proper time of pruning. The best time for the health of the tree, the time when it can most speedily heal the wounds of the pruning knife, is just after the opening of the leaf. This is, however, usually a busy time, and earlier pruning will not injure vigorous trees if the orchardist watches their growth and annually removes the superfluous branches while still small.

Grafting is a delicate operation, but every young farmer should learn it, and in default of better teaching, the following instructions may enable him to practice it.

You require (1) *stocks*, which may be young seedlings or suckers which have been planted out in the previous year, or old trees of inferior sorts may be headed down and grafted on. (2) *Scions or grafts*, which

are healthy young shoots of one year's growth, from good kinds of fruit trees. They must be cut before the buds start, but may be cut any time previously, and kept with the ends stuck in moist earth, in a shady place or cool cellar. (3) A sharp knife, some bast matting, or strips of cotton or linen cloth, and grafting wax, which may be made of 2 parts tallow, 3 parts bees wax, 3 parts rosin; or, 1 pint linseed oil, 6 lbs. rosin, 1 lb bees wax.

The simplest kind of grafting is *cleft grafting*, which suits best when the stock is larger than the graft. Cut the stock off, split it down the centre an inch or two, open the split with a wooden wedge. Cut the lower end of the graft to a wedge form, and cut off the top, leaving only 3 or 4 buds. Insert the lower end of the graft in the slit of the stock, so that the bark of one side at least corresponds exactly with that of the stock. Withdraw the wedge, and apply some grafting wax over the place of junction, so as to exclude air and wet, and tie around strips of cloth or matting smeared with the composition. If you have not composition, tie matting around the stock and scion, and make up a plaster of tough clay and cow dung, and surround the top of the stock with a ball of this "grafting clay." On large stocks a graft may be put in each end of the slit.

Whip grafting is well suited to small stocks. The stock is scarfed or sloped off at top, and the scion similarly sloped at bottom, and a tongue is raised on each by making a little split downward in the stock and upward in the scion; the two are then fitted together, the tongue in the scion fitting into the cut in the stock, and *vice-versa*, the barks are made to correspond at least on one side, and the whole is tied round with matting and smeared with composition, or with strips of cloth covered with composition.

Much of the success of grafting depends on the neatness of the cutting and joining, without leaving gaping spaces or tearing the bark, or separating it from the wood. The best time is when the buds are swelling in spring.

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Liquid Manure.

The importance of liquid manure cannot be over-rated. The farmer who permits the liquid manure of his stable to run to waste, loses about one half of his available material for the production of crops, and must ultimately reduce his farm to poverty, unless he expends large sums annually in the purchase of guano or other rich animal manure; one thousand gallons of the urine of the cow being equal to a hundred weight of guano. Nearly all good farmers are now aware of the great losses which have been sustained by negligence on this point, and large quantities of these valuable manures are now economised, more especially by providing for their absorption by swamp mud, soil, &c. There are, however, many advantages in applying them in the liquid form, especially in this dry climate; but considerable practical difficulties attend this mode of application, and we give the following remarks by a correspondent of the *New England Farmer*, in the hope that they may tend to remove some of these :—

"To farmers on a small scale who have not the means to provide themselves with that inestimable convenience of a warer-tight cellar under their barns, a simple and cheap substitnte is easily provided. That substitute is nothing more than a tank or cesspool, built under ground, of suitable capacity in proportion to the extent of the farm, placed in the most convenient situation for receiving the whole liquid refuse of the dwelling-house, the urine of every description from the barn, also water from the house pump to dilute the liquor and prevent smell when required. The tank may be constructed of stone, or brick, or even wood, as being the cheapest in the outset. Spruce plank is good enough for the purpose, and comes cheaper than any other material; and, if bedded in clay to prevent it from decay on the outside, the liquor will preserve it in the inside for generations to come. A tank 12 by 6 feet, and 4 feet deep, could be built of this wood, for about $20, and will hold over 1728 gallons; which is sufficient during the season to supply liquid in abundance to top-dress from 12 to 20 acres of grass-land, and increase the quantity of hay in a most astonishing manner. It should have a close cover for the top, part of which, however, should be movable at pleusure, with a view to cleaning out the bottom when required; and in the permanent part a hole should be left to admit a wooden pump, which is essential for discharging the liquid into the distribution cart. Also an aperture for the discharge of the back-house of the family which should be invariably placed right above the cesspool.

"A cart for the distribution of liquid can be made in different ways. Those used in many parts of Europe for that purpose, are on the same principle, and similar in construction, to those used in this country for watering the streets in cities, during dry weather in summer; but one of much easier and simplier construction may answer all useful purposes, to those of small means. A large barrel fixed on a pair of old wheels, with a spire for oxen or shafts for a horse attached to the axle, is all that is wanted; or the barrel may be placed in an ox or horse cast, as convenience may dictate, with a spout or box behind pierced with many holes in the bottom for the even distribution of the liquid on the grass. With such a cart one man can manure from 4 to 6 acres in a day, which is a great saving in the expense of labor compared with the common practice of top-dressing with composted manure, a topic worthy of some consideration in this frugal land.

"In order to derive all the advantages from this mode of manuring grass land, special attention must be paid to the proper fermentation of the liquid before application, as properly fermented, and unfermented liquid, may be compared to strong manure, and no manure at all. Every one at all conversant with the making of wine, beer and cider knows that these liquors require to undergo a certain degree of fermentation before they impart that invigorating, and stimulating effect on those that drink them, for which alone their value in proportion to their relative strength is estimated. In like manner does liquid manure operate in all its stages of fermentation; as it has to undergo several chemical changes during that process before it becomes fit food for plants. The next important consideration connected with this undertaking after the fermentation has subsided, is how to fix the ammonia and other volatile matter that the liquid may contain; and how to ascertain when they are fixed. Many substances may be used with good effect for fixing these volatile principles in liquid manure. Any ingredient of an acid nature, if added in sufficient quantity to decomposing urine, fixes and neutralizes the ammonia as it is evolved from the urea and the other nitrogenous bodies of urine; and in consequence very much enriches the utimate liquid manure. Water, as Professor Nash says, is an excellent absorbent of ammonia, and is in all cases a sufficient deodorizer, provided enough of it is used. This I have invariably found to be correct; and would, therefore, advise a certain quantity to be pumped in the tank every other day in proportion to the amount of other matter it may contain. This will completely subdue any offensive odor that may arise from the fermentation of the liquid, and add considerably to the bulk of the article. Should this course be objected to on account of such quantities of water making the preparation too weak, I would say add guano, night-soil, cow dung, or even green succulent vegetables and many kinds of weeds from the garden and field, to thicken the mass, and bring it up to the proper strength. Before application I invariably use a small quantity of diluted sulphuric acid as a deodorizer and neutralizer of ammonia; and the surest and safest criterion to judge by, when the liquid is fit for using, is its being destitute of any disagreeable odor when

stirred a about with a stick from the bottom of the tank. That shows conclusively that the whole volatile principles of the manure are fixed, and neutralized, and prepared for application to the grass or other crops. Any one may see that even water alone put upon grass while in a growing state accelerates its growth, often in a very wonderful degree; and how much more may not be reasonably expected, from such a combination of the known elements of fertility, as such liquids contain. With a plentiful supply of such liquid preparation, which are within the reach of every cultivator of the soil, from the small garden to the extensive farm, there is nothing to prevent an increase of the crops of hay and fruit four-fold, at least, if people interested in such matters would give it a trial.

"I have been a practical cultivator of the soil for over fifty years, in different parts of the world, and it is only within the last five years that I learned the secret of properly preparing and applying liquid manure to growing crops; and since then, I have seen two, three, and even four crops of strong grass cut from the same ground in one season by the copious application of liquid preparations; and for that valuable discovery I have to thank Professor Liebig's familiar letters on chemistry; although deadly opposed to book-farming previous to that date." T. C.

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Healthy Potatoes.

In the present precarious state of the Potato, it is an important question—what can be done in spring to ensure a healthy crop? Much we believe may be done, though we are convinced that the disease is deeper seated than to be reached by any remedy short of the removal of that degeneracy which has resulted from the long cultivation of the plant by division of the tubers. The following suggestions are from a publication entitled "Contributions toward the Improvement of Agriculture in Nova Scotia," by Professor Dawson, now of McGill College, Montreal.

Agents in developing the potato disease.—"The principal are wet and undrained soils, wet seasons, wet weather after warm dry weather, when the tops are fully grown; chilly nights succeeding hot days, rank manure in contact with the sets, want of attention to keeping the crop well tilled and free from weeds, run-out tubers long cultivated on the same farm. These and similar causes have evidently had an important influence in locally developing the disease, but *none of them can be its general cause*, since the disease often appears where all are absent, and these causes were quite as general as now, in former times, without producing any such consequence as the potato blight. Some valuable hints, however, as to the best palliatives or temporary remedies for the disease, can be derived from these causes, in connection with the experience of farmers. Of these *temporary remedies or palliatives*, the following are very important:—

"1. *Early planting*, and planting early sorts; because this gives greater probability of avoiding the effects of autumnal chills and rains. This remedy has been found very effectual in Nova Scotia.

"2. *Change of seed*, especially from poor and cold localities, to richer and milder situations. The Scottish low country farmers have obtained excellent results by importing seed potatoes from the bleak and poor highland districts.

"3. *Selecting* those *varieties* which have proved *least liable* to the disease; and these will generally be found to be such as have been recently introduced, or lately procured from the seed.

"4. *Planting in dry soils*, and underdraining more moist soils, if necessary to plant in them. The dry, sandy uplands of King's County, have almost entirely escaped the disease, when the crop has been put in early.

"5. Applying *well-rotted manure*, and plowing it in, instead of putting it with the sets in the drills. *Guano* and composts made with *liquid manure*, have proved themselves better than stable manure. This and the two last remedial agents act by giving the plants a greater degree of healthy, general vigor, than they could derive from run-out seed, in wet soil, or in contact with rank manure.

"6. Planting in *new soil* and the use of *mineral manures*. It is generally observed, that the potato has been most healthy when planted in new, virgin soil, before the unskilful agriculturist has extracted from it the stores of alkaline and other mineral manures remaining in it from the ashes of the forest. The composition of the ash of the potato at once explains the reason of this, as the following table, taken from Johnston, will show:—

"Ashes in 10,000 lbs. of the roots and stems of the potato.

	Roots.	*Tops.*
Potash,.....	40.28	81.9
Soda,.....	23.34	0.9
Lime,.....	2.31	129.7
Magnesia,.....	3.24	17.0
Alumina,.....	0.50	0.4
Oxide of iron,...	0.32	0.2
Silica,.....	0.84	49.4
Sulphuric acid,..	5.40	4.2
Phosphoric do...	4.01	19.7
Chlorine,.....	1.60	5.0
	82.23	308.4

"Here we have large proportions of soda, lime and potash; the latter forming nearly 50 per cent. of the ashes of the roots. Now these substances, potash especially, are plentifully supplied to the soil by the ashes of the woods, and are usually deficient in exhausted lands. Hence, if we apply to run-out, or long cultivated soil, lime, wood-ashes, gypsum, (sulphate of lime,) common salt, (choloride of sodium,) bone dust, (phosphate of lime,) we supply it with some or all of the more important substances in the above table, and thus assimilate it to the virgin soil in which experience proves the potato to thrive best. I have found, by experience, that healthy potatoes (though not a large crop) could be obtained by planting with no other manure than a pint of unleached wood-ashes in each hill, in seasons when potatoes planted with ordinary manure were blighted. This is not intended as a recommendation to be followed on the large scale, but merely to show the effect of wood ashes in promoting the health of the plant. When ordinary manures are used, wood ashes may be placed over the sets on the top of the drills, but should not be in contact with stable manure or other rich animal matter.

"For the same reason it is, of course, unwise to raise successive crops of potatoes on the same soil. Whenever, on old land, a proper rotation of crops is not attended to, there is much greater likelihood of failure."

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Transactions of the Board of Agriculture for Upper Canada.

The number for January, contains as usual much local statistical matter, indicating vigorous efforts in the improvement of Agriculture, more especially in the departments of Agricultural exhibitions and improved stock. The address of the retiring President of the Association, David Christie, Esq., M.P.P., contains some very judicious remarks on the importance of a scientific education to young farmers, and more especially on the advantages which they might derive from attending, during winter, the course established for their benefit in the Toronto University. We fully concur in his views on this subject, and are happy to hear that there is every prospect of the institution of a similar course in Montreal next winter. We prefer extracting, however, as important at the present season, a portion of the address referring to the subject of rotations, green crops, and wheat culture:—

"Our mode of farming differs essentially from that now pursued in Britain. We have no course of rotation of crops, which is generally practised. The system there is the four years' course—turnips, barley, or oats, clover and wheat. Summer fallowing is seldom resorted to, as it is considered that the land can be sufficiently freed from weeds and grass by the hoeing and working of the land required for the turnip crop. The farmers of Great Britain have no difficulty in

raising abundant crops by this process, and the application of various kinds of manure. There can be no doubt that, for them, their system is excellent and highly remunerative. Their method of tillage is:—after the wheat crop is harvested, the land is pared and ploughed. In spring it is ploughed twice and sometimes thrice, for turnips. In the next spring it is ploughed once, and sometimes twice for barley; so that the sheep droppings may be well mixed with the soil, and thus ensure an even crop. The third crop—clover—is sown with the barley or oats, and gives a year's rest to the teams, until the land is broken up with one ploughing, and sown with wheat the fourth crop.

The great difficulty in the way of the introduction of the course into Canada, is the turnip crop. It is not meant that root culture would not be productive of highly beneficial results, but that the amount o labor which is necessary for it is almost unattainable in the present state of the country. The principal part of the labor is not in the preparation of the soil for sowing, but in the after tillage and harvesting. In England, there is no difficulty in procuring any number of laborers, at any given time, and at a moderate rate. Here, the case is entirely different. At some seasons, it is very difficult to get men; and the busy time with the turnip crop is during one of those seasons—namely, wheat harvest. In this climate, turnips ought not to be sown before the end of June; if sown sooner, they become dwarfish, and rot readily. We usually begin wheat harvest about the 17th July; so that if the turnip crop be sown in the end of June, the proper time for thinning and hoeing it would be during harvest, when to attend to it, would be to neglect the wheat crop, and run the risk of losing it. Then the plan of feeding turnips to stock, on the land, as in England, would not do in Canada after the middle of November, as the severe frost would render it impossible for sheep to eat them. Neither could they be allowed to remain in the ground during the winter, as the severity of the weather during that season would completely destroy them for food. To make the turnip crop valuable, it would be necessary to house it, and this would require a large amount of labor. Turnips can only be raised to advantage on a small scale, for winter food for cattle and sheep, not to the extent of the fourth part of the available land of every farmer. As a substitute, Indian corn has been tried; still it has the disadvantage of being a cereal—carrying off from the soil some of the same substances which constitute the food of other plants of its class. In fact, in the absence of root culture, it is a very difficult matter to have a proper system of husbandry. However, even a change of cereal crops is better than no change at all. The system of planting corn after wheat, then barley or oats, then clover and afterwards wheat, is much practised in the United States and Canada. This course has been found to answer well. It would give, consecutively, one-fourth of the cultivated land on a farm for turnips, potatoes, corn and peas; one-fourth for barley or oats; one-fourth for clover, and one-fourth for wheat. Were this plan pursued, and all the farmyard and artificial manures applied during the first year of the course, except gypsum on clover, I have no doubt that farming would be more lucrative than at present. All the crops would be more abundant, and there would be more system and regularity about the work of the farm than now prevails.

In the mode of tilling for wheat, the first and great point is to drain the land. In many places in Canada, the soil is so wet that wheat cannot be sown with even the probability of a fair return from it. A large portion of the country is of this character. The really first-rate wheat land in Canada, as in the State of New York, is limited in extent. I admit that a great deal of land is sown with wheat, but I do assert, and the result fully bears out my opinion, that in its present state, that is while wet and undrained, a great deal of land is sown with wheat which ought not to be sown with that kind of grain, for it only results in failure and disappointment. The first step then is thorough draining where it is needed, on all land intended for the growth of wheat. Wheat must have dry soil or it cannot grow well. The Genesee country and other districts famed for the growth of wheat are dry. The sub-soil of those places being gravelly, forms a permanent drain for superabundant moisture. It is gratifying to find that public attention is being directed to the subject of draining, and I gladly embrace this opportunity of urging its general adoption.

The next important point in the cultivation of wheat is deep tillage. The old furrow of six inches deep and nine wide won't do. The roots of the wheat dlant must have no such obstruction as hard pan at the depth of seven or eight inches. The land ought to be turned to the depth of twelve or fifteen inches. The plan of turning a sleek painted furrow, may be very well as a piece of fancy work, but will not answer practical purposes. Change your rules at your ploughing matches. For the narrow and shallow furrow substitute a wider and deeper one, carry the rule to your farms and you will find a vast difference in the produce per acre. Instead of breaking your summer fallows or clover sod with two horses, do it with three or four, or with what is an excellent plough-team, a span of horses and yoke of oxen.

A very essential matter is to clear the land thoroughly of grass and weeds. The great enemy to wheat is the spear or couch grass, and it is a very difficult one to get rid of; if not checked it bids fair to take possession of our best wheat lands. In England it gives a great deal of trouble, and the wish to get rid of it has led to various experiments. The old system of summer-fallowing, although partially successful, was found to be expensive and not so thorough in its effects as it was desired; it cost a great deal of labor and did not do the work effectually. The best English farmers set it down as a system requiring double the number of teams necessary for the present improved mode. They discovered that the mere ploughing of land did not kill the grass, and that even four and six ploughings did not eradicate it, that even after all that it still lived and infested the soil. They now act on the principle that to destroy speedily and effectually the vitality of a plant it is necessary to cut off the communication between the roots and leaves because no plant can long survive without coming into contact above ground with the atmosphere. They found that the *ordinary plough, unaided by any other implement*, cannot effect the object. In England they use what is termed the "paring-plough;" one kind of which (Bentall's) cuts the ground to the depth of two or three inches; another, and I think the preferable one, (Kilby's) not merely pares but turns over the ground. After this paring process, the ground is ploughed deeply; thus the grass is buried at a considerable depth were it remains undisturbed, to serve as manure. In the Genesee Country, as in other places in the U. S., a rather different plan is pursued, still the principle is the same. The ground is pared and ploughed at the same time, by an admirable implement called the Michigan subsoil, or double mould board plough. It consists of two ploughs, one placed before the other, and on the same beam. The forward one takes a furrow slice two or three inches deep, separating the tops of the grass from the roots, and laying its slice in the bottom of the previous furrow; the hinder one follows, raising a furrow slice eight or nine inches deeper, which it lays on the slice cut by the forward mould board. During the process of ploughing the soil is broken and mellowed, so that the work of harrowing can be afterwards easily and well done. The grass is so deeply buried, that harrowing or even light ploughing cannot afterwards bring it to the surface, to waste or grow again. Land ploughed with this plough, during the late wet season, after lying without being harrowed for six or seven weeks, scarcely showed a blade of grass, while that in an adjoining field, ploughed with an ordinary plough, and afterwards well harrowed, was quite green. The reason is obvious. Sod plouged in the ordinary way sends grass through the seams of the furrows as soon as turned over. This growth spreads through the furrow slices binding the whole together. When cross-ploughed the sod is not rotted, but is turned over in square pieces, which can scarcely be shaken apart, and then wheat is sown to struggle among sods and grass which grow again and choke the young plant. The practice of turning up again clover which has been ploughed down for manure, is certainly not in keeping with the idea that in

order to be of service manure must not be much exposed to the action of the atmosphere. What good farmer would allow manure to lie bleaching on the surface of the ground? Is it more sensible to cross-plough clover sod? And how is it possible to get rid of couch grass when we plough up half-rotten sod? The mode now pursued in the best wheat districts of New York, is to plough down clover in the middle or end of July, it is *turned over to the depth of three inches* with the "gang-plough," an implement with four small ploughs fastened to a beam resting on two wheels. This beam can be raised or lowered to the depth required, and the implement is regulated by a pole to which the horses are attached. *Unlike the cultivator, it turns effectually the whole surface* of the ground. It is drawn by three horses abreast. After the first working, should any grass appear, the land is again gone over with the "gang-plough." Before seeding it it is harrowed well. The wheat is sometimes drilled or sown broadcast and then covered over with the "gang-plough." I have seen a great deal of land managed in this way during the present season in the State of New York, which, as a bed for wheat was far superior to that which was ploughed three or four times."

We prefer, both on scientific and practical grounds, the Scottish four course rotation long since recommended by "A Farmer in the District of Montreal," to any of those referred to by Mr. Christie, though it must be admitted that they are good, and in some respects well suited to the country. The difficulties in the culture and storing of root crops referred to are no doubt real, but may be met by improved implements and management, as we shall endeavour to show in following up the article on these crops on another page. The remarks on wheat culture are well worthy of the attention of farmers, though they refer to what we must consider a defectiue system of rotation.

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On Hedges.--By George Lesslie, Toronto.

Hedges, or live fences being the subject for discussion at the first meeting of this club, I beg leave to give you an idea how hedges are managed in the old country; being brought up in a country where there was little else used for fences, but hedges, and being practically engaged in planting, trimming and managing some of the very finest hedges in Scotland.

Beech and Thorn mixed, were the only plants used for outside fences. Our mode of preparing the ground was as follows:—We dug a ditch 3 feet wide, and threw it all up one side, and levelled thoroughly from one end of the line to the other, we then set our line, and planted our Quicks in the face of the bank, half slope; then took the shears or hedge bill and cut them all to one length out of the ground: a breadth of 2 feet inside was dug once a year—this hoed and kept clean.

On large estates there is a scientific man kept, and goes by the name of hedger. He takes great pride in cutting and trimming his hedges, and tries with all his might to excel his neighbour. It requires a good deal of practice and taste to switch hedges neatly. In Canada, I have had but little to do with hedges; I am satisfied, however, that the time has arrived in the old settlements of this country, to look out for a plant that will make a permanent, substantial fence. The thorn has been tried in many parts of America and abandoned. I have given it a fair trial myself, and gave it up, at least for the present, on account of its diseases and attacks of insects, yet I would recommend further trial of the thorn, as I believe that the disease has not been as bad as it was three or four years ago.

Osage Orange, the best hedge plant I know, I have tried in my nursery several times, and find that it is altogether too tender, for this part of Canada at least.

Rhamnus Catharticus, Buckthorn. so much recommended by the late Mr. Downing, is a strong, quick, growing plant, and is perfectly hardy; makes a very good close hedge properly cut, and looks well; it has this advantage too,—insects will not touch it, and cattle will not brouse on it at any season of the year. Very easily grown on any kind of soil, on account of its fibrous roots. I have been selling plants of it for three or four years past, and in every instance it has given great satisfactfon; a specimen hedge may be seen at the nusery, 4 feet high. I have reason to believe, and say with Mr. Downing, that the Buckthorn will be the great hedge plant of America.

Privet, makes a beautiful ornamental hedge, grows rapidly in good soil, and almost an evergreen; good specimens of this may be seen in some of the gardens about Toronto.

Honey Locust, or Three Thorn Acacia, has long been recommended by the Americans for a farm hedge; but I have not seen a good specimen of it in all my travels. I have tried to make a hedge of it in the nursery, and find that it gets a good deal winter killed, and does not stand cutting; however I would advise a fair trial of it on dry, sandy land.

Japan Quince, makes a fine ornamental hedge for pleasure grounds; it is quite hardy, and when in flower, is magnificent in appearance.

Beech, is much used for hedges in the old country, but is too hard to transplant, and don't stand evenly. It is better mixed with thorn—makes good shelter on account of retaining its foliage all winter.

American Cedar, for an evergreen ornamental hedge, is very valuable, or for a screen to protect gardens and orchards, &c., there is no plant so suitable. It makes a superb hedge, and is of rapid growth—stands any amount of cutting; altogether the best evergreen hedge plant I know. There is a specimen to be seen in the nursery.

Hemlock.—Of all the ornamental plants for an evergreen hedge, the hemlock has no rival; the only thing against it is, that it is too tedious to start evenly, and hard to transplant even out of the nursery bed. I may here remark, and take the credit to myself, that I was the first in America to try the Hemlock as a hedge plant. I had succeeded so well after a few years trimming, that Mr. Barry of Rochester took notice of it, and wrote to Mr. Downing and other horticultural writers in the States, about the hemlock as a hedge plant, and the beautiful specimen of it to be seen at the Toronto Nursery; the result is, that now thousands of yards are planted every year by gentlemen in the States, and nurserymen are growing it from seed for that purpose.

Red Cedar.—Treated as a hedge plant, makes a beautiful evergreen hedge, equal I think to the hemlock; but I have not had much experience with it as yet. On Long Island, near New York, I have seen splendid Red Cedar hedges. I intend to experiment on it this spring. I have some thousands of fine plants for sale.

There are several plants that might be used for low ornamental hedges, such as Barberry Tree, Honey-suckle, Euanimus, or Strawberry tree, Dwarf Golden Willow, American Holly, &c.

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Rural Economy of the British Isles.

Cattle.

I shall now proceed to show how rich English agriculture is in cattle as well as sheep. England possesses the finest milch cow race in those beautiful, intelligent, gentle-looking animals, which go under the name of Alderney, and in the Scotch Ayrshire—that charm race of cows, whose graceful forms, speckled hides, quiet dispositions, large udders, and rich luxuriant supply of milk, realize the idea of pastoral life. She possesses also, the short-horned Durhams—animals which may be fattened as two years old, and attain, at that age, a weight which no other breed can arrive at so soon. Their heads, legs and bones, have been reduced to such small proportions, and the more fleshy parts of the body so largely developed, that nearly three-fourths of their weight is meat.

After the Durham short-horn, which, among cattle, is what the Dishley breed is among sheep, come the Hereford and Devon breeds, which, in their turn may be compared to the Southdowns and Cheviots. The Hereford breed follows closely upon the Durham, and is even more generally sought after, as offering almost an equal precocity, and the same aptitude for fattening, but with greater hardiness. The county of Hereford,

from which it comes, lies at the foot of the Welsh mountains, and possesses a soil of but indifferent fertility,

The English farmer looks upon cattle, with the instinctive calculation, which distinguishes his class, and argues that there are three descriptions of produce, which man may demand from cattle, besides the manures the hide and the offal—namely, their labor, their milk and their flesh. Of these, he deems their labor the least profitable, and therefore looks chiefly to their meat and their milk.

He demands of his milch cows the greatest supply of milk, and a good Ayrshire cow will give four thousand quarts of milk in the year; and it is reckoned that the three million cows in Great Britain produce three thousand millions quarts in a year—an average of a thousand quarts for each cow. The French cows, many of which are worked, do not average, as a whole, over five hundred quarts a head. To get the greatest quantity of milk from the cow, the English farmer has studied and labored, till he has spread over his fields the finest herds of milch cows in the world.

It appears, at first sight, that the work our cattle are made to go through with, would have but little influence upon the return they give in meat. It might be supposed that this work, since it turned the life of the animal to account, admitted of a cheaper production of meat. But not so argues the English farmer. He believes that habitual labor causes animals to become hardy, vigorous and slow, to eat much and fatten little, to increase in bony structure, make little available flesh and that slowly; that habitual inaction on the country, produces a soft, lazy race, which fatten early, assume rotundity of form and fleshiness, and on an equal amount of food, give a better prduct of butcher meat. The English farmer argues further that where labor is the first consideration, the animal is not killed till it has finished its office; but on the other hand, where meat only is sought, it is slaughtered at that period when it gives most, and that when the breed is precocious, this period comes early—and that thus, by raising cattle for slaughtes, he gets the best return for what they consume. The English farmer's reasoning on this matter, is, I have no doubt, right, when he possesses a precocious breed of cattle like Durham or improved Hereford. And this reasoning would be true, in any country possessing similar breeds of cattle, unless the profit of working oxen was greater than is in England. The result of British agriculture in raising cattle are that Great Britain feeds eight millions of horn cattle—slaughters two millions annually, which she realizes a hundred milions of dollars for meat alone.

The other species of domastic animals are horses and pigs. As regards horses, the preeminence of the English breeders has long been recognized. As for the race-horses and his rival, the hunter, everybody knows by what a combination of effort the English have succeeded in producing and keeping up these superior breeds. They are productions of human industry, real works of art, obtained at a great expense, and designed to gratify a national passion. A fine horse constitutes with everybody the ideal of fashionable life; it is the first dream of the young girl, as it is the latest pleasure of the aged man of business. But the English have breeds for draught, which are equally valuable. Such, for example, are the plow horses, the best of which, perhaps, come from Suffolk. I have already stated that tillage with horses has been generally substituted by the English for that of oxen; they thought, and with reason, that the quicker action of the horse made its work more productive, and that an idle life made the meat of the ox more productive. But they have done more; they have substituted horses for men wherever manual labor—the most expensive of all—could be replaced by a machine set in motion by horse-power. The brewers' horses and those used in coal wagons are celebrated for their strength and bulk. The best fetch high prices. It is the same with the carriage horses; the breed of Cleveland bay from Yorkshire is reckoned one of the most perfect that exists for average work.

English pigs on an avarage are not very large; but they are killed young, exemplifying the great principle of precocity contended for by Bakewell, and applied to all kinds of animals destined for food. They are all of breeds which fatten rapidly, and whose shapes have been improved for a lengthened period.

The English rear few fowls, the dampness of their climate being unsuitable for it, and spite of the efforts of wealthy amateurs, the occupation has hitherto obtained but little favour; whereas in France the annual production of eggs alone is estimated at twenty millions of dollars, and that of all kinds of fowls at an equal sum.

Such are the advantages obtained by British agriculture, from the best breeds and the best management of them in rearing domastic animals.

I must next show what crops support this animal production of England; for crops are both the causes and consequences of a great production of domestic animals.

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The Provincial Exhibition.

As this great design is one of paramount importance to this community and agriculturists generally, to the exclusion of other matter we give place to the following from the Montreal Transcript:—

"We understand great efforts are being made by the County Societies, both Here and in the Upper Province, to exhibit specimens of Stock at the next Provincial Exhibitions such as will take the shine out of all that has been formerly shown in Canada. Our own County Society is importing two additional Ayrshire Bulls, and another couple of monster pigs. There is, however, considerable dissatisfaction evinced by many of the farmers with whom we have conversed, in reference to the ninth of the general regulations printed for the guidance of competitors in the Lower Province. It declares that "an animal which has already gained a first premium at a Provincial Exhibition, cannot again receive one in the same class; but it may be awarded a certificate, if it be deemed worthy of the first prize, but not otherwise" This rule is said to be very unjust, and destroys all fair and honest competition. The Provincial Exhibition in Upper Canada, for instance, takes place before ours at Three Rivers. Animals which carry off first premiums there cannot again compete here. Therefore, as, in a pecuniary point of view the first prizes here are more valuable, none of our first class stock will find their way to Kingston. One great object of these Exhibitions—large and extended competition—will thus be frustrated. Again, the rule is unfair towards the Upper Canadian farmers who make no such condition with ours; but let all the animals desirous of competing come in whether they have or have not already carried off prizes, and give them a fair field and no favor. And, once more, it is unjust towards our County Societies who, with a spirit of progression that does them great credit, at much expense and trouble, import animals here to improve the stock and add value to the breeds already in the country. The only way of repaying such Societies is by allowing them every facility to compete with each other; and letting the best carry off the prize. We, therefore, commend this matter to the attention of Major Campbell and his *confreres* of the Board of Agriculture; and trust it will have their attention at an early meeting."

The "Transcript" is in error. The Three Rivers' Show commences on the 16th September, the Kingston Show on the 23rd. The advantage, such as it is, lies with the Lower Province, and she is heartily welcome to it. Our Agriculturists are determined to render the Exhibition of 1856 "a great fact" in the industrial history of the Province, and they desire above all things to encourage and invite honorable competition. The "American Scientific Association" meet at Albany the third week in August; they have issued invitations to some twenty or thirty of the first Scientific men in Europe, to make the voyage both ways free of expense. The invitation includes Professor Lindley of the Horticultural Society; Sir William Hooker, of the Botanic Gardens; Sir Joseph Paxton, and many other high Agricultural authorities. The American Association will rise in time for the members to proceed to the Three Rivers Show on the 16th September, the Kingston Show on the 23rd, and the Watertown Show on the 30th. And as some of the best judges in the world will be among us, we are making great efforts, and do mean to show Europe and America what the Province can accomplish.—*Kingston News.*

Bone Crushing.

POINT LEVI, 6th April, 1856.

ISAAC R. ECKART, ESQ., Quebec.

Secretary, Q. C. A. S.

DEAR SIR.—By an advertisement in some of the public papers I am glad to see that the Quebec County Agricultural Society offers a premium to any person who will establish a *bone crushing mill*. I have often thought that such a thing was wanted in this neighbourhood, for I am well aware of the good effects of crushed bones as a manure, having tried them here 30 years ago, under very unfavorable circumstances, having no other way of crushing them than with hammers on a large stone. Of course the work was but very imperfectly done, notwithstanding which the result was such as to show to my satisfaction that crushed bones are an excellent manure. Where I had applied them the spot was remarkable for many years by its superior greenness, &c. To derive the greatest advantage from bones, they should be ground to such a powder as to be sown along with or at the same time with turnip seed, &c. And they would be a substitute in some measure for that fashionable manure, Guano, which is not likely to be had here at reasonable prices.

As I have always been an advocate for Railways and Turnpike roads; being aware of the immense advantage they are to any country, and seeing that the great obstacle to their working well in this country is the collection of drifted snow in the deep cuts which it is necessary to make where the road passes through high grounds. Now to obviate this I would suggest planting, in a *proper manner*, such trees as were best adapted to the ground, a certain breadth, say an acre, less or more, according to circumstances, on each side such *deep cuts*, extend-somewhat farther at each end. By which means, in the course of a few years, the Railway would be so protected from drifts of snow that the ordinary snow plough would probably be sufficient to keep the way clear even in *deep cuts*.

As you are more acquainted at head quarters than I am, I take the liberty to let you know my ideas on this subject, which can do no harm, and might be of very great importance to stockholders and the public generally.

Your humble servant.

CHARLES ROBERTSON.

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Agriculture in Lower Canada.

TREES.

There is one more defect connected with the management of land in Canada, which I must not omit,—that is, the almost total destruction, when clearing land, of every tree that grows upon it, and the general neglect to plant any other trees, either for shelter or ornament, or for the use of the farm. I have frequently endeavored to attract attention to this subject, in order that some steps might be taken to prevent or check this evil, but the destruction still goes on, as if it was desirable that we should not leave a vestige of the fine forest trees that covered the lands of Canada, or plant any others in their place. The total destruction of trees where settlements are being made is attempted to be justified, in consequence of the difficulty of preserving trees when clearing land, and it is urged also that the trees that are left interfere with the cultivation of the soil. There may be some foundation for these objections; but I think it would be quite possible to overcome them, so far as preserving some of the trees, by selecting those that have the deepest roots in the soil, in situations where they are not so much crowded, removing all the underwood, and thinning the large trees out to a certain extent. There may be trouble in saving the trees when the fire goes over the land, but nevertheless some may be preserved from injury. More trees might be left than would be necessary, and then if some were injured by the fire, a sufficient number might remain safe. The best varieties to leave as scattered trees, for shelter, ornament, and for use, are the elm, birch, beech, maple, hickory, ash, butternut, and perhaps the oak. Soft woods tree, if preserved, must be left in clumps, or groves, as they will not stand alone, if of large size. The cedar, or pine species, left in clumps or groves, are very ornamental in the landscape, and may pay well for the land they occupy. If circumstances should not admit the preservation of some of the original trees of the forest, when clearing land for cultivation, trees should be planted at once, and I have no doubt they would pay for the land they occupy. Young trees of thriving appearance may be taken from the forest, and, if carefully planted, they will grow very rapidly. There is an advantage in planting—that the trees may be placed in the most eligible situations, where they will answer the best purpose, and be of the least injury. On an average, one hundred square yards would be amply sufficient space to estimate for each tree, until they would attain the age of thirty or forty years; hence, the use of only one acre of land would be lost for thirty-six trees, and if these trees were of a useful description, they would, perhaps, pay as well, when at a good size, for the land they occupied, as any other portion of the land, besides the shelter and ornament they afforded for so many years. They might, if cut down for any purpose occasionally, be replaced by planting other trees. I have seen trees planted alone in good soil attain a very considerable size in thirty years. In Britain, trees are planted for profit, and were considered to pay well for the land, if parties could only wait to allow them to attain a good size. But, apart from all consideration of actual profit, the rural population have an interest in maintaining the beauty of the landscape, and it is impossible to do so without a due proportion of trees. The long, straight lines of dead wooden fences, and the absence of a due proportion of trees is a great disfigurement to the landscape in Lower Canada. Trees of almost every variety were the natural growth or production of this country, from the lowest valley to the summit of the highest mountains, and I feel persuaded that it must have an injurious tendency to strip the land at once of all these trees, particularly where the summers are so hot, and the winters so cold. There is no doubt that the destruction of the trees in other countries has been found to be very injurious generally, and I fear it will have the same effect here, if we go on cutting down every tree, and not planting any. In many parts of L. Canada, where there is not a tree left standing, I have no hesitation in saying that the land suffers in consequence, and also the live stock pastured in Summer upon this naked and unsheltered land. I do not advocate too much shelter upon our arable land, because I believe it would be injurious to our crops of grain, but to a reasonable extent, trees and shelter judiciously provided, are absolutely necessary in Canada. In the Mother Country, live fences and trees prevail so much in some situations, that agriculturalists complain that they are injurious, but chiefly in consequence of their being a protection to game. In this country, shelter is more necessary, and we have not the trespass of game to apprehend. Doubtless, we cannot have the land which immediately surrounds a large tree very productive of either grain, grass or vegetables, but if all the remainder of the farm is well cultivated, except that part occupied by beautiful trees, left for shelter and ornament, we might very well afford to forego the crop that would be produced where these trees stand. I believe I am perfectly justified in stating, that a farm of two hundred acres, with a sufficient number of trees, judiciously placed, for shelter and ornament, would be more productive of grass, grain, and vegetables, for man and his live stock, than the same farm would be, if it had not a tree upon it. It may be very desirable to subdue the forests, and settle the country with industrious inhabitants, but the utter destruction of all the trees is not necessary to the accomplishment of this object. On the contrary, this object may be better attained by preserving some of the forest, or by planting other trees to the necessary extent, in place of those we cut down and destroy. This subject is of sufficient importance to entitle it to the serious attention of our Legislators. There is already sufficient proof of the injurious effects produced by depriving the land of every tree that grew upon it. It is better to inquire into the subject in time, while a remedy is in our power, than to wait until the matter is forced upon our attention by the manifest deterioration of the land in consequence of the destruction of the forest, and the want of trees and shelter. Any observing person, making a tour in the country in summer, will have noticed how animals appear to enjoy

the shelter of a large tree during the heat of the day, if they are so fortunate as to have a tree growing in their pasture. It is also worthy of observation, how greatly animals appear to suffer in the heat of summer, in exposed, unsheltered pastures, where there is not a tree or shrub growing, and in such situations, there is seldom much grass for the stock. The country was amply furnished with beautiful trees, in all possible varieties, when we took possession of it, and with our boasted civilization, our first connection with the forest is to destroy it,—in fact,—we declare war by the axe and the fire against every tree of it. In other countries, the most unmistakeable mark of education and civilization is to have a due proportion of trees in every variety, with hedges, shrubs, &c., and the absence of trees, and beautiful hedges, was the most certain indication of ignorance, poverty, and if not poverty, of bad taste, or want of a due appreciation of the useful and beautiful. Probably many parties may object to my proposition in regard to the great advantages of a due proportion of trees on every farm for shelter, ornament, and other useful purposes. I, however, would be delighted to have the matter fairly and thoroughly tested, in order that if trees are proved to be advantageous, as shelter for our land, our live stock and for other purposes, measures may be adopted to prevent the utter destruction of our native forests, without providing for their necessary shelter, &c., by the planting of trees regularly to a certain extent. A country without trees, reminds me of the descriptions I have read of the deserts of Arabia, or the frozen regions near the North Pole. It may be replied to my remarks, that the country is not so utterly denuded of trees as to justify my observations on the subject. In taking a general view of the country, trees and the original forest are seldom out of our vision; but at the same time you see numerous farms without a tree or shrub growing upon them. It is not of much advantage to these naked farms, or to the cattle pasturing upon them, that the forest may be within a mile of them, and that one or more trees may be growing upon a farm not far off. I am anxious to show that trees are necessary upon every farm, and if they are not growing there naturally, should be planted with as little delay as possible. It has often been my chance to see a beautiful tree growing in a cleared field, where, perhaps, it was the only one upon the farm, cut down, for no other object, but the use of the wood for fire. It is very proper to cut down trees when we require them for use, provided we can spare them, or that we plant others in their place; but to cut down an ornamental tree, that affords shelter to our cattle in the extreme heat of summer, is, to say the least of it, very inconsistent, with regard to our own interest, the comfort of our cattle, or any idea of what is necessary to constitute a beautiful landscape. Any attempt to interfere with the right of parties to do as they please in the management of their own property may be considered objectionable, and if a settler wishes to destroy all the forest trees upon his lot, without planting any others, he may suppose it would be very unjust to prevent him doing the first, or oblige him to do the latter, if he was not so disposed. I will not presume to offer any opinion on this subject. My object is to endeavor to show the injurious effects of destroying all the forest trees, without planting fruit or other trees, where they might be necessary for shelter, ornament, or other useful purposes. It is in our power to ascertain, by inquiry and investigation, what would be the probable result to the soil, and perhaps to the climate, by the total destruction of the forest in the country that is being settled and cultivated. I have read many reports of the injurious effects produced in other countries by the destruction of the forest, and the want of trees, and it appears only reasonable, that to strip the country we settle, at once of the whole of the natural production that covered it, may produce a very great change, though we may not be able to comprehend perfectly why it should have this effect. In countries having a humid climate, and not subject to the same degree of heat in summer as this is, the want of trees would not be so injuriously felt as in Canada. It is, therefore of general importance that this matter should be enquired into, and if trees are considered to have a beneficial influence, that means should be adopted to preserve them in due proportion, or that other trees should be planted. In the British Isles, landed proprietors are sure to plant trees and provide for their protection to a sufficient extent, and when woods are cut down, others are planted. If we continue to go on cutting down the forests here, as we have done up to this time, we shall not in a few years have a tree left in the settled parts of the country, either for ornament, shelter, or for necessary purposes. I believe the Legislature have passed an Act for the protection of game in this country; but perhaps where there is so much of Canada still covered with forest, it may not be thought necessary to adopt any measures for saving a portion from the axe and fire of the settler, as the work of settlement proceeds. The sooner every tree and shrub that grows upon a settler's lot of land is cut down, burned, and the ashes converted into potash and sold, the more successful he considers himself. There is not a farm that should not have some reserved wood upon it for necessary purposes that are constantly recurring, and if some of the original forest is not preserved, other trees should be planted regularly that would supply these demands, and answer for shelter and ornament, and be of general use to the country. Fine trees, in full leaf, are considered by most people to be beautiful objects, and notwithstanding this fact, it appears a most inconsistent proceeding, that we should destroy them all. Of course it is necessary for the settlement of the country that a large proportion of the forest should be cut down, in order that the land should be cultivated for the support of settlers; but as we have land in such abundance there is no necessity to destroy all the forest as we occupy it for settlement, we should spare a portion, if it was for no other purpose than to indicate the original state in which we received it for the occupation and support of our race.

WM. EVANS.

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Gardening.

We copy the following from the "Canadian Gardener," a useful little work published in Aylmer in 1851, and written by Mr. A. Parker, Gardener, in that place.

Situation. — Those who have only land enough to cultivate for a garden, must be content with its situation; but to those who are in possession of a farm, I would advise, (as it is generally admitted,) that the garden be situated, on a gentle declivity to the south and east, —yet it is admitted that a northern situation will suit some vegetables best; such as the Cauliflower, Cabbage, English Bean, Spinach, Lettuce and other salads. Gooseberries will also ripen best when excluded from the midday sun. As earliness of production is an important object to the gardener, I would advise the former situation, viz.,—a south east situation, as many vegetables can be raised under the north side of the south fence.

As to form, it should be either square or oblong. If oblong, the longest side may be situated east and west,—I would recommend the latter form, as it would tend to raise a larger quantity of garden produce at an early peiod, under its northern fence. As to declivity of situation, a descent of one foot in twenty is recommended. Should the soil however, be light and sandy, I would recommend a perfect level situation, as in this case, heavy spring rains would have no tendency to wash away the seeds from their beds, destroy young plants, or carry off the best of the soil.

SOIL.—The best kind of soil for a vegetable garden, is a deep rich loam rather inclining to sand. A strong stubborn clay should be avoided. These selections are intended for garden vegetables generally, yet some of the same may do best in soil of a clayey nature, whilst others do best in a very sandy —these will be treated upon separately as we proceed.

PREPARATION.— Having recommended a situation for the kitchen garden, the next process is to prepare the ground—which is to be done in the following manner: Firstly, by ploughing and harrowing until the surface be perfectly smooth and clean. Secondly, by a good coat of well-rotted manure and a double ploughing; that is two furrows deep with a good sized plough—this should move the ground to the depth of fourteen or sixteen inches, which consequently will throw up a considerable quantity of the subsoil.

I would recommend that another dressing of compost or manure be added, and a single ploughing after. For the purpose of making the surface even, the latter ploughing should be back furrowed, by commencing where the former ploughing was finished, and turning the team on the opposite side. Should your garden be wide enough, I recommend cross-ploughing; or what is much better, good trenching two spades deep, that is, the length of two garden spade blades, which will at

least be two feet deep. This depth is not unreasonable should your soil admit of it, but if inadmissable, let the trench be as near to the measure as possible.

Trenching.—This is done in the following manner:—Begin at one end of the piece of ground, and shovel out two feet deep and two feet wide; Cast the soil, dug up, on ground you do not intend to trench; shovel out the bottom clean, and make the sides of your trench as near perpendicular as possible; thus you have a clean open trench, running all along one end of your garden ground. You will, as a matter of course, observe the necessity of using a wheel or other barrow, in conveying the soil dug out, into the last trench. Lest this might not be understood, after completing your first trench, you will then take another piece all along two feet wide, and put the earth that this new piece contains into the trench, taking off the top of the new two feet wide, and turning that top down into the bottom of the trench, and then taking the remainder of the earth of the new two feet wide and placing it on the top of the earth just turned into the bottom of the trench. Thus when you have again shovelled out the bottom, you have another clean trench two feet wide and two feet deep.—You will thus proceed till the whole of your garden ground be trenched, and then it will have been cleanly turned over to the depth of two feet. This should be done in the fall, and in consequence of the subsoil being on the top, it should have a dressing of manure in the spring, and well mixed by digging.

Clay Subsoil.—Should your subsoil be stiff clay it should not be cast upon the surface at once, but should be loosened up with the subsoil plough or spade, as per example, see trenching. Observe that the bottom or clay part should be well broken up and cast out. This indeed, is not all that should be performed as the under ground drainings must be well attended to—these may be under the garden walks. Finally, the above mentioned soil is not to be preferred; should however clayey soil be well manured, nearly all kinds of vegetables will thrive in the same. I cannot pass this subject without reminding the Farmer of the great benefit to be derived from the use of she subsoil plough, especially on clay bottom land.

Fencing.—A good fence is essentially necessasy, although too often neglected. How often do we see garden crops destroyed for the want of proper or good fences. Should the farmer not have time to perform the work necessary for a good garden, it is to be hoped, that he will not neglect making a substantial fence so that he may enjoy the fruits of his industry, from a garden which he has perhaps but partially cultivated. As to the material of the fence, I will leave it to the judgment of the owner; but were I to command the means of making an ornamental fence, as a matter of course, I would make or plant a hedge. As few however command the means of making a brick or stone wall, I would recommend the north side to consist of boards, as on the south side of the same, grape-vines and other useful and ornamental shrubs could be reared.

Hot-Bed.—The prevalent opinion amongst farmers respecting hot-beds is, that they are expensive articles requiring the skill of professed gardeners to manage them, and almost entirely beyond the range of farming economy. Both suppositions are decidedly erroneous, and we hope that every-one who reads this will arrive at the same conclusion. We do not propose that every farmer should go into the regular routine of forcing vegetables at extraordinary seasons, but that every farmer, however humble his circumstances may be, should at least have a hot-bed to forward such plants as he may want to cultivate in his garden.

In preparing a frame and lights for a hot-bed, some previous instructions on the subject will be necessary, (unless it be well understood by the person who is to make the bed.) The sash should be made of good two-inch plank, without cross bars, in which there are to be four rows of panes of small glass. The sash is to be well painted; and in glazing, begin at the bottom and overlap each light about one-fourth of an inch, so that the rain water may run off. The length of the sash is to be in proportion to the extent of the bed; but by no means over six feet, and no more than four sashes to each frame, and the latter to be made of plank, which is to fit the sash. The back part of the frame to be nearly three feet high, and the front about half the same in height.

The site should be a dry place open to the sun and sheltered from the northerly and easterly winds. Previous to making the bed, manure should be prepared, which may be unfermented stable dung. The preparation is simply this:—Throw into a heap, and when a smart fermentation occurs, turn it over.

In making a bed, the European system is to build above the ground three or four feet high; but in this country of sharp wind and dry atmosphere, I should deem it best to dig about eighteen inches below the surface, if the ground be not too wet; in this way two feet of dung, when settled, is sufficient. The former method is however preferable, should you want your plants to have an early start, as it gives a chance for lining (that is to place hot manure all round the frame to the top of the latter, which will keep up the heat, and can be renewed when necessary.)

In making the bed, shake the manure with a fork evenly over the whole bed, which should be the size of your frame.

If your dung be dry, apply water to the same; on this set your frame, and in it also put six inches of good rich soil, with a mixture of sand. Put on your lights, and when the heat rises, move off your glass and stir the soil. Should the heat be very strong, wait a few days before sowing, and admit plenty of air both before and after this period; in fact, the more air the better, provided there be heat enough to encourage vegetation—the sowing should be neatly done. After the plants appear, thin them out if needed, and give them plenty of water and air. I find the last of March or first of April, are periods early enough to sow for transplanting.

Beet.—There are varieties of this vegetable, the best of which for the table, are the early blood-turnip-rooted and long blood-red. The soil in which it delights, is a deep rich loomy kind. Should a few for early use be desired, I would advise sowing as early in the spring as the ground may admit. If for a general crop, let the sowing be delayed until May, as the roots will be much larger and better than those from early planting, which from being frequently stunted in growth by the various changes of weather, become tough, stringy, and of unhandsome shape. In case of the failure of crops, or of unfavorable weather in May, Beet seed planted the first week in June, will sometimes produce large handsome roots, which may be preserved for winter use.

I recommend that the seed be soaked in soft luke-warm water for at least twenty-four hours; to be sown in drills from one to two inches deep, and fifteen inches apart, if in beds. When they establish their vegetation, they may be thinned to about eight inches apart. In all cases the soil should be pressed down immediately after sowing, particularly that of a light quality.

Cabbage.—Varieties of this plant have often been introduced to our attention, and many more than are necessary for our present purpose. At this period, however, I will not introduce to your notice a greater number than what may be profitable and useful to you, and these are the large and small early york and green savoy to be used in the summer, the quintal and drum-head for winter, and the red dutch for pickling. There are other varieties which are indeed very good; but as the propagation of the plant is my principal object, I shall make no mention of them, as they all require the same mode of treatment,—distance alone excepted, and this should be left to the seedsman.

Time of Sowing.—Much has been said and written by divers authors relative to the sowing of cabbage seed in the fall, for transplanting in the spring; but they spoke and wrote for other countries and not for Canada. For early use, I recommend sowing in a hot-bed, towards the last of March or the first of April. Should this advice be followed, you will find your plants strong and healthy when the period arrives for transplanting them; provided light and air enough may have been admitted during their confinement in the hot-bed. The best plants are produced by "pricking out" when quite small into a well prepared bed, in drills six inches apart and three inches in the drill.—there to remain fifteen or twenty days. What may answer equally well as this process, is to sow in drills, and "thinned out" as above. A knife may be inserted under the drills in a slanting position, and deep enough to cut off their tap roots, about two inches below the surface; this will cause new roots to germinate, and will have the same effect as "pricking out." In case the above directions be not attended to, the plants may be "*thinned out*" when young, so that they may be straight and strong for transplanting.

The state of the weather when these operations are performed, is not a matter of indifference, and has been a subject of controversy; some recommending dry weather, others, wet. As in many cases of disputation the truth lies between them, that is, moist weather that is neither dry nor wet, and precisely that which is best for setting out cabbages or any other vegetables. We ought not, however, wait long for even this state of the atmosphere, since with a little labor we have the means of making up for its absence.

Transplanting.—The small early-york, and others of the same size, which are not enumerated here, are to be put in rows of course. As to distances, they must be proportioned to the size which the cabbages usually come to. For the small early-york plant, a foot apart in all directions is enough; and the large york,—from eighteen to twenty inches will be sufficient space. For savoys and red-dutch, two feet apart in all directions will suffice, and for the large drum-head three feet may be sufficient. One particular, I wish you to observe, and this is, that in

transplanting, the earth must be caused to come in contact with the point or lower part of the root—*this is an important object*. The ground should be plowed or dug up previous to planting.

Every variety of cabbage grows best in a strong rich, substantial soil, rather inclining to clay than sand, but will at the same time, grow in any kind of soil, if it be well worked and abundantly manured with well rotted dung, and the after culture well attended to. I would recommend to hoe them while the dew is on, at least once a week.

Should your early cabbage have an inclination to burst ere you are prepared to use them, you may lift them sufficiently to start or disengage the roots, (partly,) and this will retard their growth.

It is well known that the turnip fly will destroy young cabbage plants &c., soon after they crack the ground, and often it is laid to the imperfection of the seed.

To guard, therefore, against this fly, sow your cabbage on top of your root-house, or in a box or mound which may be elevated several feet above the level of the ground, as in their flight, they attain but to a trifling elevation.

CELERY.—There are several sorts of this plant, but the propagation and cultivation are the same. The whole of that part of the year during which the frost is out of the ground, is not at all too long for getting fine celery; it should be started in a hot-bed, and *pricked out* into a bed made very fine, and this should be done with care; it should afterwards be watered gently—once will answer, and then they may be shaded for a few days. In this bed they may stand till the last of June, or about that period, and then may be transplanted in the trenches; make the latter about four feet apart, one foot wide and one foot deep; throwing out the earth equally on both sides of the trench; the ground in which you make the trenches may be in a solid state. Along the trenches put some good compost manure, consisting partly of wood ashes, not fresh dung; dig in the manure and make all very fine. Take your plants and trim them of the long roots; shorten the tops, pick off all the side shoots or off-sets, and plant them six inches apart. You may hoe them with a small hoe, and as they advance in growth earth them up, but not too much at one period, lest you smother them. In going through this process, hold up the leaves, that the earth may not get between the outer and inner ones.

LEEK—This is a vegetable which for certain purposes is preferred to onions. The time for sowing is as early in the spring as the weather and the ground will permit. Sow in drills of fine earth eight inches asunder, and thin the plants to three inches apart in the row. Keep the ground clean till about the first day of July; then take the plants up, cut the roots off to an inch long and cut off the tops of the leaves, but not too low down; make deep drills with a hoe at two feet apart, plant the leeks in these drills with a setting-stick, fastening them well in the ground and leaving the drill open. As the plants grow, put to their sides the earth that came out of the drill; after that draw more up to them on each side from the interval, and if your ground be really good, each leek will have attained a sufficient size for use.

LETTUCE.—All knds of lettuce will have arrived at greater perfection by being transplanted in good ground. The tennisball and other small kinds will grow within six inches of each other, but the royal cape, grand admiral, and the large cabbage kinds should be set one foot apart each way. In transplanting, you will be careful to allow some of the original earth to adhere to the roots of your plant when you detach the same from the seed bed.

ONION.—Of the several kinds of onions, the red and yellow are the most profitable as a general crop; and of all the varieties, (potato onion excepted,) these will keep best through the winter. The New England White is a mild, pleasant onion, but not good for keeping. All the varieties propagated by seed require the same culture.

The onion will grow best in a moist and loamy soil, although they will grow in soil, partialy sandy, if well rolled after sowing. Previous to sowing onion seed for a general crop, the ground should be well prepared by digging in some of the oldest and strongest manure that can be got. The earlier this be done in the spring the better, and the planting should not be delayed longer than the middle of April, if the season will permit. The seeds may be sown moderately thick in drills, from half an inch to one inch deep, and twelve inches apart.

When the plants are up strong they should be hoed. Those beds that are to stand for repening, should be thinned out while young, to the distance of two or three inches from each other. If a few should be required for use after this, those can be taken which more incline to tops than roots, and if the beds be frequently looked over, and the small and stalky taken away where they stand thickest, the remaining bulbs will grow to a large size.

The plants should be hoed at least three times in the early part of their growth; but if the season prove damp and weeds vegetate luxuriantly, they must be removed by the hand, because after the onions have begun to bulb, it would injure them to stir them with a hoe. When the greenness is gone from the top of the onions it is time to take them up, as from this time the fibrous roots decay. After they are pulled they should be laid out to dry, and when dry removed to a place of shelter. The small onions may be planted in the spring. Even an onion which is partly rotten will produce good bulbs, if the steed stems be taken off as soon as they appear.

PARSLEY.—Parsley is a hardy biennial plant, and grows wild in moist climates, but has been greatly improved by cultivation. The leaves of the common parsley are used as a pot-herb, and those of the extra curled kinds make a fine garnish.

These may be sown in the fall or spring in a cool situation, a quarter of an inch deep, with the earth pressed hard upon it; this process is indispensably necessary in dry weather. In addition to its utility as a culinary plant, it is highly ornamental in its first year s growth, as an edging for walks.

PARSNIP.—As the seed of this vegetable is so long sown ere it vegetates, it is recommended to sow as early in the spring as possible; drill culture is preferred; the seeds to be sown in the drills, fifteen inches apart, and thinned out to four inches. Soil and preparation the same as the beet. That part of your crop of parsnips that you may not want until spring, may be left in the ground, and those dug in the fall, may be packed in dry sand or sandy earth.

SEA-KALE.—This being found on the shores of Great Britain, forcing its vegetation through gravel and sand, has led a great many to believe that such a soil as the latter would be the best for its culture; but it is now found by experiment, that the soil suitable for the Asparagus, will suit this vegetable also. It is a hardy perennial of long duration, and may be raised from the seed or pieces of the root.

Its earliness makes it more valuable, and when blanched, it is highly esteemed as a culinary vegetable.

[Sea-kale is a much more useful plant than it is usually supposed to be. A little salt applied as manure greatly promotes its growth.]—*Ed.*

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URATE.

This fertilizer has not been very extensively used, as yet, in our country, and few are aware of its nature, or the process by which it is formed. Every one must have noticed on entering a stable, or other place where horses are confined, a very peculiar and pungent odour, often affecting the eyes, and sometimes the throat, and creating nausea. This offensive principle is ammonia, one of the most powerful, and—contemplated in an agricultural point of view—most valuable of all the gaseous products of vegetable decomposition. Now if we sprinkle common gypsum, or pulverized plaster of Paris, we shall economize this volatile substance, and bring it to a condition readily available as a substance for plants. In its fertilizing character and properties, it is similar to *urate*, but not strictly the same.

It is asserted by manufacturers that from three to four hundred weight of urate form an ample dressing for an acre of wheat; but how much better would it be for the farmer to economize the liquid voidings of his domestic animals, in the manner here described, and apply it to his crops of hay, grain and roots, as his necessities or wants may require. All urine is rich in the food of plants; the urea and salts are all highly valuable, and no one who rightly reflects upon the subject, will willingly suffer it to be lost.

Another article of much value in economizing the liquid voidings of animals is sulphuric acid. It should be first diluted, say one gallon of the acid to one and a half gallon of water, and sprinkled over the manure heaps, or floors where animals are confined, every morning. Urine, in its fresh state, does not evolve ammonia; it is only when in the putrifying or fermenting process that this gas is given out or eliminated. Pulverized charcoal, and a solution of copperas, are also valuable, used for this purpose.

By attending to this matter the farmer may easily save a large amount of his richest fertilizers in a single season. His lands will be all the richer for it, repay him liberally and for all trouble and expense involved.

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REMARKS ON BREEDING HORSES.

Mares that have been well treated while young, (that is, not allowed to get stunted in growth,) may be used at three years old; but as a general rule, four is early enough to commence breeding them. From this age, good mares may be bred every year, if due care be paid to feeding, and not over-working them, till they are twenty years old. Beyond this age, they cannot be relied upon with much degree of certainty to breed, although in many instances they do, but it is by no means a general rule.

In answer to the inquiry, whether ringbone, spavin, or any other disease is hereditary, I answer, that I am fully convinced some diseases are. Many years ago there was brought to this country a fine stallion, said to be a high blooded horse. He was stone blind, and the person who brought him here solemnly declared that it was caused by a severe blow between his eyes. This declaration, together with the fine form and graceful action of the horse, induced many of our farmers to breed their mares to him. But in a few years they saw how sadly they had been bitten; for a great number of his colts were either weak eyed, or went entirely blind, without any "*blow between the eyes,*" as no doubt their sire did before them. Some of his colts were kept for stallions, and the same is as true of *their* posterity. I consider this proof positive that blindness is hereditary in the horse.

Another disease has come under my observation, which satisfies me that it, also, is hereditary. It is what is called club-foot, and I have seen instances of it springing from the sire, and others from the dam. I well know some deny this being hereditary, and argue that it is caused by the colt travelling on hard ground about the time of the first hoof is growing off, and breaking, or wearing the foot sore, which causes it to stand on its toe, till its foot grows strait or turns under; but certain I am that there is a greater disposition in colts bred from club-footed parents to get *sore feet*, than there is in any others. So strongly I am convinced of the truth of this, that I would not breed a mare to a blind or club-footed horse if I considered him perfect in every other particular.

With regard to ringbone, or spavin, I am not posted, but my opinion is that they are in some degree to be feared. If I owned a mare with either of these blemishes, I would not stop breeding her, unless I found by experience that she entailed the disease to her colts; but I should not run the risk of breeding a clean limbed mare to a stallion with these blemishes.

If Equus is about to enter into horse breeding, I would advise him to obtain good young mares, say from four to six years old, even if they cost him more, and then they are fit for both raising colts and work, and he will be saved the expense of keeping other horses to perform his farm labor. The colts may be easily learned to lead by their dams with a halter, and thus save much annoyance to their master, and they will not be half the trouble to break when they are thus tamed.—PLOUGHMAN in *Country Gentleman*.

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FARM LABOR WITH THE ELEPHANT.

The "cultivator," which was sufficiently large to anchor any twenty of the small native bullocks, looked a mere nothing to the splendid elephant who worked it, and it cut through the wiry roots of the rank turf as a knife peels an apple. It was amusing to see the same elephant doing the work of three separate teams when the seed was in the ground. She first drew a pair of heavy harrows; attached to these and following behind were a pair of light harrows; and behind these came a roller. Thus the land had its first and second harrowing and rolling at the same time. This elephant was particularly sagacious; and her farming work being completed, she was employed in making a dam across a stream. She was a very large animal, and it was beautiful to witness its wonderful sagacity in carrying and arranging the heavy timber required. The rough trunks of trees from the lately felled forest were lying within fifty yards of the spot, and the trunks required for the dam were about fifteen feet long, and fourteen to eighteen inches in diameter. These she carried in her mouth, shifting her hold along the log before she raised it, until she had obtained the exact balance; then, steadying it with her trunk, she carried every log to the spot, and laid them across the stream in parallel rows. These she herself arranged, under the direction of her driver, with the reason apparently of a human being. The most extraordinary part of her performance was the arranging of two immense logs of red keenar, (one of the heaviest woods.) These were about eighteen feet long and and two feet in diameter, and they were intended to lie on either bank of the stream parallel to the brook and close to the edge. These she placed with the greatest care to their exact positions, unassisted by any one. She rolled them gently over with her head, then with her foot, and keeping her trunk on the opposite side of the log, she checked its way whenever its own momentum would have carried it into the stream. Although I thought the work admirably done, she did not seem quite satisfied, and she presently got into the stream and gave one end of tho log an extra push with her head, which completed her task, the two trees lying exactly parallel to each other, close to the edge of either bank.—S. W. Baker's Eight Years, Wanderings in Ceylon.

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FEROCITY OF A HOG.—The week before last week, Messrs. John Oakley and John Emigh, who reside in the northern part of the town, started to drive a hog to a neighbor's, and had proceeded but a few rods when the hog turned to go back. They tried to drive him, but instead of going, he charged directly upon Mr. Emigh, who struck him a heavy blow across the snout as he came. This seemed to have but little effect, (the hog is over a year old and pretty large,) and he reared up on his hind feet, struck Mr. Emigh and knocked him down, seized him by the leg above the knee, inflicting a fearful wound. The suddenness of the attack, the blow and the wound caused Mr. E. to faint and the hog would have undoubtedly killed him, had not Mr. Oakley, who was close by, came to the rescue.

Mr. O. had no club, nor time to get one; so he grappled with the hog and tried to throw him or pull him off. Finding himself attacked in this way the hog left Mr. E. and turned upon the assailant, knocked him down, and seizing him by the leg near the knee joint tore him so dreadfully that it is feared he will not be able to walk in a long time and perhaps be maimed for life.

During the fracas Mr. Oakley called the dogs—a large Newfoundland—one who seized the hog and dragged him away from the men, thus no doubt saving the life of one or both.

We learn that Mr. Emigh is able to get about with the assistance of crutches.—*Poughkeepsie Telegraph*, March 4.

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United States Agricultural Society.—The Executive Committee of the United States Agricultural Society had a meeting in Philadelphia last week. The *Philadelphia Ledger* says of it:—

How to get Green-Pea Soup in Winter.—"We shall have visitors early in February, and must have green-pea soup once or twice at least. Tell the gardener to provide a supply of young peas." Such was the order given one Christmas day to the cook in a great household, and duly communicated by the culinary to the horticultural department. "Fresh green peas in a month, in the middle of winter! the thing's impossible," cried the astonished gardener. "My lord can't have given such an order; we havn't a house or a light to grow them in—and if we had....." "We must have them for all that," was the curt rejoiner; and the gardener was left to discover the *quo modo*. In his dispair the worthy man bethought him that young peas and young pea leaves tasted much alike, and that, perhaps, the one might be as good for soup as the other. So he took some shallow pans, planted them pretty thickly with dwarf Spanish peas, put them in his early vinery on a shelf where he sometimes grew strawberries and where a good heat was kept up. They soon began to grow; they had air as much as it was possible to give it them, and by the beginning of February were six inches high, well furnished with healthy, tender green leaves and stems. The supply thus obtained was cut like mustard and cress, and handed over to the cook, who declared that it made better *puree* than if he had had green peas themselves. And from that time forward peas were forced at——as regularly as French beans; and all lovers of good living wondered how Lord—— continued to have such capital *puree* of green peas whenever they visited him in the winter.—*Lindley's Gardeners' Chronicle.*

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FRUITS IN SEALED CANS.

A good deal was said last fall about putting up fruits, green vegetables, &c., in hermetically sealed cans—a patented article—and having them come out in the winter as fresh and nice as new. We purchased a dozen of such cans, and made the experiment to our satisfaction. Before, however, we express our opinion, we give what the *Ohio Cultivator* says about it:—

Putting up fruits in sealed cans, was extensively practised last fall. Many people are now enjoying the luxury of fresh peaches, tomatoes, and the like, much to their health and comfort. With the latest improvements in cans and canning, this is easily attainable in many sorts of fruits and vegetables. Owing to the unusual wetness of last season, the fruit was very watery and unfit for late keeping, but our peaches and tomatoes open as nice as can be expected. Some people tried to seal up green corn, but as far as we know, failed in every instance to keep it good. We must try some more scientific plan to keep this dainty dish. Others have had a more sad experience in canning Rhubarb or Pie Plant, which contains so much oxalic acid, that on being used from the cans has nearly been the death of whole families. Keeping in this way seems to give more virulence to its poisonous qualities, which are comparatively harmless when the plant is used fresh from the garden. Let the matter be looked to.

This caution is timely. Plants or fruits that contain oxalic acid will become poisonous—and we dont know but some other vegetables, may by standing too long in metallic vessels. We filled our cans with green peas, beans and corn, prepared with exact care, according to

the directions. On opening a can of peas the other day, for the first time, there were something in both smell and taste so odious, that we cast them far from us very speedily. The beans and corn proved less offensive, but neither was a dish that any who surrounded our table would choose to eat. The whole, in our experience, was a decided failure, and others may have the pleasure of this admonition at our expense. Fruits preserved in the old fashioned way, in sealed glass bottles come out much better. Our black raspberries, particularly, are a great acquisition to our winter table.—*Rural Intelligencer.*

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Transplanting Fruit Trees.

Seeing an article in the "Country Gentleman" of the 27 March, upon the subject of the "Transplantation of Trees," it occurred to me that a few suggestions upon the subject of transplanting fruit trees might not be out of place at this time of the year.

I have had some experience in transplanting trees, and latterly with good success. I set an orchard of 165 trees in 1851, and every one lived. I set three small orchards in the spring of 1854, and notwithstanding the almost unprecedented drouth of that year, I lost but one tree. Two of the orchards were upon very dry gravel soil. There I lost none. I dug a pit for each tree about 16 or 18 inches deep, in basin form, about three feet in diameter, and put in a large wheelbarrow load of good loam soil. Upon this I set the tree, holding it in my hand while my man with a shovel sprinkled the soil which came from the top of the pit on to the roots, having first been made fine. The tree is moved up and down so that the fine soil is worked under the roots until they are fully covered, and should the roots be so shaped and so clustered as to form a roof to prevent the soil getting fully up under the centre, the hand is used to accomplish it. When the roots are covered, a quart or two of water is turned upon the centre of the roots, which form a mud directly under the body of the tree. Then dry soil is again thrown on, upon which the person holding the tree steps, planting his feet 4 or 5 inches from the tree upon each side, and so passes thereon round it. The water or mud will by this pressure be forced up to the top of the ground, which gives evidence that all the space under the roots is filled.

The soil is then thrown around the tree to about the height it was in the nursery, but raising a circle around it high enough to hold a pailful of water. If the season is one with ordinary rains, they will leave out and grow. If they should not, and the season is dry, place around them some broken straw and long manure, giving each one a pailful or a half a pailful of water. Should any fail to leave out with this treatment, tie around the trunk quite up to the limbs or further, a thin layer of straw, putting on the upper layer first, and then with a ladle turn water upon the upper end of the straw until the tree is thoroughly wet, and repeat it daily. This will seldom fail to bring out the leaf; and save the tree.

Should any of the trees falter through the summer, as they may, if a dry one, give them a pail of water in the basin prepared for it, and they will go through. This is some trouble, but if a tree is worth buying and setting, it is worth saving.

I have saved trees which had been very much dried before they had reached me, by digging a trench in a wet place, and heading them down so that the body will be at an angle of, say, 30 degrees with the ground. If water shows itself in the trench it is no objection. When the roots are so covered, the buds will open if there is any vegetable life in the tree. They should then be set.

I very much prefer the spring to the fall for setting trees; but as the early part of the fall is the best time for getting a chance of trees in the nursery, it is well to take them out at that time, and heel them down in dry ground, in a protected spot, until spring, and then set them. I treated pears and plums in that way the last year taken from Thorburn & Co.'s Nursery, Albany, and every one lived, and more than half of them ripened fruit the first year.

S. CHEEVER.

Waterford, March 27th, 1856.

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Draining--Results of Experience.

A meeting of the principal English agriculturists, who have distinguished themselves in improved farming, was held in London during the past winter, which was confined in its discussions wholly to the subject of underdraining, and, as might have been expected, a great deal of valuable information was elicited. The experience of British farmers with draining has been great; and the conclusions they have arrived at on some disputed points, cannot fail to prove interesting. But we find the same defect in their statements, that characterizes nearly all the details of experiments made in this country; namely, a want of accurate estimates or measured results. Their conclusions are given generally, without any data by which we know the amount or degree of benefit or injury occasioned. "*I think so,*" or "*I know so,*" is not a very scientific rationale, nor very clear mathematical calculation.

Depth of Draining.

An important point, on which nearly every one present agreed, was that deep drainage, —not less than four feet,—was invariably the best. Among other statements on this part of the subject, we observe that of T. Scott, who had had for fifteen years constant connexion with extensive works for drainage. In 1838, he superintended 140 miles, which were dug 27 to 30 inches deep. The bottom was laid with sole tile, or with 12 inches of stone broken so as to pass through a 2½ inch ring. "The effect of the drainage was wonderful, and repaying at the time;" but, as proved to be the case with many other shallow drains, these seemed to lose in part their efficiency after several years; but having learned the superior advantages of deep drainage, measures were taken ten years afterwards to take these all up and replace them with four feet drains. The objection that surface water would not find its way down to such a deep channel, had not been found to exist in practice, which indeed appears very obvious when it is remembered that water will descend through soil four feet much easier than horizontally 12 or 15 feet, which it must do to effect thorough drainage of the land.

Deep drains were found to commence running sooner than shallow ones, and to continue running longer—showing their greater efficiency; doubtless owing to the fact that the subsoil must be first filled by the falling rain, up to the bottom of the shallow ditto, before the flow of water can begin; and it must again cease when the surplus water in the subsoil is reduced down to this level.

Only one member of the meeting advocated as shallow a drainage as three feet—which he did on the ground of saving expense, the last foot of a four-feet ditch often costing as much to excavate as the three previous feet.

It was claimed by some members, that soluble manure would be carried down and flow off in shallow drains, while the water will run clear from those of greater depth. This reasoning does not appear to possess much weight, for if the channels are two rods apart, all the surplus water of the soil would be only *one sixteenth* nearer to the three-feet drain than to the four feet—a difference of small amount, and affecting very little the results in practice.

It would have greatly assisted our enterprising farmers in America in determining the proper depth, if we had been furnished in this report with precise statements of the actual difference in results,—given in figures from careful measurements,—showing the increased cost per acre of the various increased depths, together with the greater amount of growth in crops. As the statements now stand, there is nothing more than a mere expression of *opinion*, founded on extensive observation. A five-feet ditch may be best; but what we want to know is whether its increased cost will *pay*.

Importance of Levelling-Instruments.

Where there is a steep descent, little difficulty is commonly felt; yet a *uniform* descent would admit of smaller tile, and preveht those lodging places for sediment, which has been sometimes found to cause the entire obstruction of the channel. When the land is nearly level, an instrument for determining the descent, in the first place; and for its uniform slope in the second, is absolutely indispensible. Col. Challoner mentions instances where, without this careful attention to the fall, three-fourths of its entire amount had been taken up before the drain had been cut half its length, thus leaving the remainder almost a dead level and nearly useless. He recommended an accurately-made common bricklayer's level, whose length divided into the entire length of the drain, would give the descent for each length, and perfect uniformity be thus maintained in every part.

Cost of Draining.

It appears from the various remarks made by the speakers, that *brush-draining* had been regularly and efficiently performed for 30 to 40 shillings per acre, or eight or ten dollars of our money. These continued to answer the purpose for twelve or fourteen years. The drains appear to have been made much shallower than the four or five feet tile drains, which have cost about five to seven pounds or twenty-five to thirty-five dollars per acre, and which is about the same as the cost of draining in this country only two and a half or three feet deeper. The difference in cost, in the two countries, is attributable to the difference in the price of labor and cost of tile. We entertain hopes, however, that by the use of Pratt's ditching machine, we may be able to drain land three feet deep, and lay it with tile, for $20 per acre, of which the tile will be one-half. The price of tile now, is much higher than in England, but it will unquestionably become cheaper when there are greater facilities for its manufacture, but more especially a larger market for it than at present.

Durability of Drains.

The opinion was expressed that deep, well made drains, would last at least fifty years. If they would last fifty, we cannot see why they would not last a hundred and fifty. The only thing in the way of their continued durability appears to be sediment accumulating in the tile and choking it, or the settling of the earth about their exterior and filtering into their crevices, and thus shutting up the access to them from without. In clay soils, there appears to be little liability to internal choking. In those of a sandy and gravelly nature, the danger is greater, and is to be prevented, (in addition to the uniformity of descent already mentioned,) by using collars at the junction of the pipes, by surrounding the pipes with gravel or broken stone, to be covered with flat stone, hard-wood slabs, or brush, or using brush alone in contact with the tile. In quick-sand, all these remedies may need to be combined. The same remedies will of course prevent external clogging. This difficulty was found to be much greater in shallow than in deep drains. Fifteen years ago, two feet was regarded as deep, many drains being less, but they soon lost their efficiency.

Advantageous Results.

G. Donaldson mentioned a piece of land in Clydesdale, drained in 1821-2. The land was previously so wet and boggy that it was unfit for cultivation. It was drained from three to five feet deep, and the third year afterwards it produced a crop of wheat of six quarters (48 bushels,) to the acre, and 64 lbs. weight per Winchester bushel and had ever since been in profitable cultivation. Another instance,—300 acres in Lancashire,—never before cultivated, producing only coarse grass and heath; after thorough underdraining, was ploughed and produced a crop of oats which sold at public auction for 9 pounds (45 dollars), per acre, and the land was let for the next year for £11 ($55) per acre. In another instance, mentioned in a letter from W. Hulton, of Lincolnshire, land which "four horses had found a difficulty in ploughing, is now producing excellent crops of wheat, worth almost the fee-simple of the land in an unimproved state." In another case, mentioned by J. B. Denton, the Speaker of the House of Commons (his name not given,) had several farms to drain, occupied by tenants much prejudiced against deep draining. A single farm was therefore drained four feet deep. "When this was done, the tenants one and all, begged that their *wet* lands might be drained—they selecting the *wettest* portions. On the completion of this second job, the same tenants, with greater earnestness, begged now to have the same lands drained that they had withheld as *dry*,—because they found by comparison with the drained land, that the excepted dry land was *insufferably wet*."

The following calculation shows the great importance of deep draining, and after it, of deep tillage, — viz. that every *inch* of additional depth of drainage, drains and renders porous for the cultivation and the penetration of the roots of crops, *one hundred tons* of soil per acre. The following interesting and striking facts show

The depth that Roots will Penetrate.

J. B. Denton (who is high authority) says, "I have evidence now before me that the roots of the wheat plant, the mangold wurtzel, the cabbage, and the white turnip, frequently descend into the soil to a depth of three feet. I have myself traced the roots of wheat nine feet deep. I have discovered the roots of perennial grasses in drains four feet deep; and I may refer to Mr. Mercer, of Newton, in Lancashire, who has traced the root of rye-grass running for many feet along a small pipe-drain, after descending four feet through the soil. Mr. Hetley, of Orton, assures me that he discovered the roots of mangolds in a recently made drain five feet deep; and the late Sir John Conroy had many newly made drains four feet deep stopped by the roots of the same plant."

The Distance of the Drains Asunder.

Most of the speakers thought that this distance should not be less than 30 feet, and on the whole recommended 25 to 30 feet. Some of them seem to think there was a definite distance to be observed, for the remark was made that "a single yard too near may be a pound per acre thrown away, while a yard too wide may occasion dissatisfaction for ever." We cannot see how so distinct a line may be drawn. The soil nearest the drain is of course made dry first, and then that more remote, in gradual succession; and the greater the distance the longer the land would require to become properly drained. There is a certain medium, pointed out to observation and expediency, which a view to economy may make greater distance, where labor is costly and land and crops cheap, than otherwise; although the saving of labor in tillage by underdraining, should not be forgotten in the estimate. The quantity of rain that falls, and which rains in differents places, may have an important influence on the number of drains to carry it off speedily.

The Keythrope System.

This is a system of drainage, extensively practiced by Lord Berners (who had previously expended several thousand pounds in shallow drainage, in the common or *gridiron* arrangement of the drains.) In the Keythrope system, the arrangement of the drains is entirely irregular, and dependent solely on the natural seams and strata in the soil—and is of course only applicable to such soil as have these seams and strata—and which are more common than many suppose. In some places, a single drain, properly located, will affect complete drainage of a large piece of land; in others, numerous parallel or branching drains may be requisite. To ascertain this very important point, *trial holes* are dug at regular intervals all over the piece of land to be operated on; the rapidity with which they fill, and the quantity they contain, will afford a guide for the commencement of operations. A ditch is cut in such places as appear best; and then its effects are observed on the trial holes. Those which are soon laid dry by this means, show that no more drains are needed there, even if at some distance. While those that continue filled with water indicate that further drains are required, the position of which must be governed by observation and circumstances.

The chief recommendation of this system is its *cheapness*. The drains being cut only where they are actually wanted for use, a great saving of labor is effected, the cost by this mode sometimes being not more than one half that of the regular or gridiron system. Several gentlemen who had visited Lord Berners' lands after a long and heavy rain, affirmed that the drainage was effected by this system in the most complete and thorough manner.

We have no doubt that in many portions of the country, the adoption of the plan of digging trial holes *at regular distances* over the whole field to be drained, would afford much valuable knowledge on the requirements of the land, and on the position of drains; and that much land supposed to be quite dry and to need no labor of the kind, the water would be found to stand a long time in the holes, showing the amount of stagnant water in the subsoil.

Position of Drains.

The general voice of the members of this meeting was in favor of running drains down hill by the shortest or steepest course. If the drain descends *obliquely*, and if water will leach into it from above, it may also leach out again on the lower side; but once in the directly descending drain, it cannot flow out again, but takes the shortest cut down the hill, in the bottom of the ditch. In the Keythorpe system, however, exceptions are made to this rule, wherever the nature of the stratified earth seems to demand it.

—:o:—

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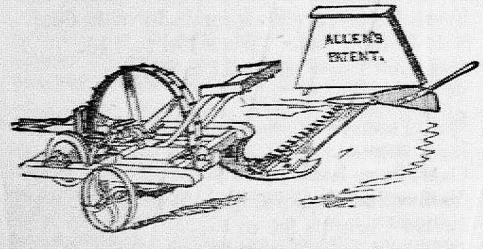

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Notice of Competition to be give to the Secretary-Treasurer on or before the 20th July next.

By Order,

JAMES SMITH, Sec.-Treas.

Montreal, 1st May, 1856.

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J. FROTHINGHAM, *V. P.*
J. T. BARRET.

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Among the regular contributors to the London Quarterly Review were Southey, Scott, Lockhart, (its late editor), Apperley, Ferguson, Wordsworth, Lord Mahon, Dr. Milman (whose articles on Oriental literature have been so highly esteemed), and that wonderful woman of science, Mrs. Somerville, with many others scarcely less celebrated. Then again in the Edinburgh Review, we may mention the following distinguished names, Jeffery, Napier, Brougham, Mackintosh, and Macaulay.

The Westminster Review.

This able Journal was established under the patronage and support of the ultra-liberals, so styled, of the British House of Commons; among whom Roebuck, Mill, Bowring Professor Long of the London University, Miss Martineau, and others whose names need not be quoted, conspicuously figured. It was for some years under the editorial supervision of Jeremy Bentham, from which fact it obtained the sobriquet of the mouth piece of Benthamism. This work has ever been especially devoted to the great topics which interest the mass of the people: its pages have been rife, it will be remembered, with a series of powerful articles, tending to the reduction of Tory and exclusive privileges, hereditary rights, kingly prerogatives, &c. It has recently been united with the Foreign Quarterly Review, the more attractive features of the two Reviews being now combined in the Westminster, and thus adding greatly to its value as a literary periodical.

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is a work of more recent origin than those already described—but is, nevertheless, destined to occupy as prominent a place in the Republic of Letters.

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The names of Sir David Brewster, Drs. Hanna, Cunningham, Lorrimer, Candlish, Gordon, Buchanan, Smith, &c., are a host in themselves. Much foreign talent is also pledged to adorn and enrich its pages.

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Blackwood's Edinburgh Magazine

is less exclusive in its character than the works already noticed, its contents may be considered under the general heads of classical literature, biography, narratives, historical and fictitious, poetry, critical analyses of new works, &c., &c.

When we call to mind the names of the contributors to this sterling work, it is not surprising that such high meed of praise should be awarded it in the republic of letters. Of the eminent writers who have graced its pages, may be mentioned the following: Professor Wilson, better known as Christopher North, its renowned editor; Dr. Warren, the graphic and brilliant author of the "Diary of a late Physician," and of "Ten Thousand a year," works which have been so extensively popular in a republished form; R. P. Gillies, Anster, Lockhart, James, Lytton Bulwer, Dr. Magnn, Sydney Smith, and the author of "Tom Cringle's Log," "Cruise of the Midge," &c., which have been the delight of thousands of readers.

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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 2, Montreal, June, 1856. POSTAGE FREE. Price 2s 6d per annum, in advance.

The Farmer's Journal.

Board of Agriculture, Lower Canada.

MONTREAL, Tuesday, May 13, 1856.

By direction of the President, due notice was given to the Members of the Board to meet at their Rooms in this city, this day at 11 o'clock, A.M., but there not being a quorum present, an adjournment took place to the day following, to meet at 10 o'clock, A. M.

Wednesday, 14th May, 1856.

The Board met this day at 10 o'clock, A.M.—Present :—

A. Pinsonneault, R. N. Watts, E. J. De Blois, and James Thomson, Esqrs., also J. W. Dawson, Esq., Principal of McGill College, and Professor of Agriculture in that Institution.

Mr. Thomson, Vice-President, having taken the Chair, the Secretary submitted a letter from the Secretary of the Bureau of Agriculture, Toronto—stating the re-election of the four Members of the Board who retired by rotation—namely, Messrs. Pinsonneault, Taché, Thomson, and Dumoulin. Also, a letter from the Secretary of McGill College, Montreal, stating that the Principal of that College had been appointed Professor of Agriculture in that Institution. The Secretary represented that on receiving this intimation, he had addressed a letter to Professor Dawson, inviting him to the meeting of the Board this day in that capacity.

It was proposed by Mr. Watts, seconded by Mr. Thomson,

That E. J. De Blois, Esq., be elected President of the Board, but that gentleman having declined the appointment,

It was proposed by Mr. De Blois, seconded by Mr. Pinsonneault,

That R. N. Watts, Esq., be elected President of the Board for the present year—Carried.

Proposed by Mr. Watts, seconded by Mr. Pinsonneault,

That E. J. De Blois be elected Vice-President for the present year—Carried.

It was then Resolved—That the Board learns with regret the cause of the absence of Major Campbell, from this Meeting, and sympathises sincerely with him in his affliction. It begs to convey its thanks for his zealous and able conduct as President of the Board for the last three years. The Secretary was instructed to send a copy of this Resolution to Major Campbell.

The Secretary placed before the Board a full statement of the accounts for the past year—and Messrs. Pinsonneault, Thomson, and Yule, were appointed a Committee to examine them, and report to the next meeting of the Board.

The Secretary submitted a copy of the Contract entered into with Messrs. McDougall for erecting the fences and necessary buildings for the Provincial Exhibition at Three Rivers, to take place next September.

Several applications for Sectional Agricultural Societies, were made to the Board for their sanction.

The following were the decisions on the same :

1. From south end of the County of Drummond—not granted. It appears from the opposition made by the original Society for Drummond, that it is not advisable to grant a second Society for the current year.

2. From the County of Missisquoi—not granted. Notice having been given to the County of Missisquoi Agricultural Societies, when it should have been given to the County of Rouville Agricultural Societies—the Parishes of St. Thomas and St. George forming part of the Agricultural Division of the County of Rouville.

3. From the County of Saguenay two applications. First from Malbaie—sanctioned,—to be Society No. 2 in that County. Second from Baie St. Paul—sanctioned,—to be Society No. 3 in that County.

4. From the County of Stanstead—not granted. Mr. Bullock to be informed that the protest against the formation of Society No. 2, is so numerously and respectably signed by inhabitants of Stanstead and Hatley, that the Board do not feel themselves justified in sanctioning its formation.

5. From the County of Dorchester, application for a third Agricultural Society in that County—sanctioned.

6. From the County of Shefford, application for a third Agricultural Society—not granted,—the applicants not having complied with the regulations of the Board. The proposed amendments to the law, now before the Legislature, if passed, will meet the case for next year.

7. From Three Rivers, County of St. Maurice, application for a third Agricultural Society in that County—sanctioned.

8. From Agricultural Society, No. 2, in the County of Leinster, to have two parishes added to their limits—not granted. The notice required by the Resolution of the Board not having been given to Society No. 1, the prayer of the application cannot be granted.

9. Communications from Agricultural Society, No. 2, County of Two Mountains. The Board have instructed the Secretary to say, that the Board has this day been organized according to law, and that the communication of the 27th of December last, has been laid before them. Upon inquiry, the Board find that the question to which it refers, was decided by the former Board, on the 7th of November last, and that the decision was communicated to the Society, which decision the present Board cannot now revise. This conclusion is the more readily arrived at, as the new law, now before the Legislature, provides for a separate society for each new electoral county.

10. Application from County of Champlain to sanction a public Granary—granted for the current year.

11. Application from County of Beauharnois Agricultural Society, No. 2, to be organised as the Society for the new County of Chatauguay—not granted, as the new division of Counties is only for representation and municipal purposes, not for agricultural.

12. Communication from F. H. Charest, Model Farm, Nicolet. The Board cannot at present recommend the establishment of a Model Farm.

13. Communication from Mr. Charnock, Hamilton, on the subject of Draining. Mr. Charnock to be informed that the Board will be happy to consider any proposed Law that may be laid before it for the purpose, by the Board of Agriculture of Upper Canada.

14. Application from Sherbrooke respecting slating tools missing by the "Sherbrooke Slate Company," and setting forth that they were lost at the late Exhibition held at that place. The Board have made every inquiry, and regret to say they can hear nothing about them.

15. Application from the County of Berthier Agricultural Society, to be allowed to establish a Public Granary. Granted for the current year.

16. Application from the County of Richelieu Agricultural Society No. 2, to be allowed to buy gypsum instead of seeds. Granted for the current year.

17. Application from Mr. Ossaye to be paid £12 10s for seeds and implements for the Model Farm at La Tortue. Mr. Ossaye to be informed that the Board cannot entertain the application.

18. Application from the Secretary, Wm. Evans to be paid his travelling expenses to the Agricultural Exhibition at Boston last October. Granted.

19. Communications from Agricultural Societies No. 2 and 3, in the County of Ottawa, complaining that the limits of their operations prevented them from obtaining a due proportion of the Government allowance to the County. The Board on referring to the Census of 1851, is of opinion that the distribution of money has been made in accordance with the number of the population, and that no change can be made for the present.

20. Application from the County of Chambly Agricultural Society No. 2, to be allowed to have a Public Granary. Granted for the current year.

21. Application from Mr. J. C. Spence for £5 for services at the Provincial Exhibition at Sherbrooke last year. Mr. Spence having sent in an account at the time, was paid the amount in full and signed a receipt. No supplementary account can now be entertained by the Board.

22. Communication from the Principal of McGill College in reference to its Agricultural Department, and asking for aid in procuring books and apparatus, and in offering prizes and scholarships. The Board direct that Professor Dawson be informed that the state of the funds at the disposal of the Board does not enable it to offer any assistance; at the same time the objects in view are so very desirable that it is prepared to promise that a sum of fifty pounds currency, be appropriated for these purposes, should any surplus remain in the hands of the Board, after it has settled all claims to which it may be liable, arising from the ensuing Provincial Exhibition at Three Rivers.

Resolved—In the opinion of the Board it is highly desirable that as the guardians of the interests of the agriculturists in Lower Canada, they should be consulted on all changes in the Laws relating to agriculture which may be proposed to the Legislature from time to time. It was therefore resolved that the Minister of Agriculture be especially requested for the future to communicate all contemplated changes for the opinion of the Board of Agriculture, in sufficent time to enable them to assemble and consider the same.

It having been suggested by the President that some of the members of the Board might attend such of the County Shows as may be held at places in the vicinity of their respective residences, during the ensuing autumn, it was resolved that the President communicate with the different members of the Board for the purpose of carrying out that suggestion.

The business submitted to the Board being all disposed of, the meeting separated.

By Order of the Board.

WM. EVANS, *Secr'y-Treas.*
Board of Agriculture.

Montreal, May 16th, 1856.

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Root Crops.

(Second Article.)

In our last we referred to the varieties of root crops, the manures appropriate to them and the manner and time of sowing. But supposing the ground tilled and manured, the seed sown and above ground, and safe from the depredations of the fly, the next question is—how can the farmer find time for the subsequent culture? It is useless to attempt root culture without a sufficient amount of tillage to keep the ground free from weeds, and without careful attention to thinning. These operations too must be attended to in a busy time, and may interfere with haying. Let us consider then, first, the *time* for cleaning and thinning.

It is time for cleaning and thinning when the plants are about three inches high, but it may be a little earlier or later according to the amount of weeds and the thickness of the plants; and by skilful planning the time may usually be so chosen as not to interfere with the hay crop. This will be all the easier if the farmer has sown his turnips somewhat early, and has his hay land in such condition as not to be burnt up early in the summer. Further, the tendency of rotation and root culture is to the production of heavier hay on a smaller surface, and consequently to reducing the time occupied in summer with the hay crop.

The next process is the ploughing. This may be effected speedily with a common light plough, passing it along the drills about two inches from the plants, and throwing the

soil into the space between the drills. Some persons at once commence thinning after this ploughing, but it is better after a few days to run a cultivator or horse-hoe between the drills, to stir up the soil and to some extent restore it to its place. Others use the horse-hoe alone without any previous ploughing, and this serves the purpose quite well where there are few weeds.

This operation being finished, every procurable hand must be employed in *singling* or *thinning*, a process very speedily performed by skilful workers with proper tools. The proper implement is a thin steel hoe, with a light straight handle, 3 to 4 feet long. In the Scottish method, in which the thinning is performed at one operation, the hoe used is 7 inches wide, but where the thinning is performed at two operations it should be only 4 to 5 inches wide. Hoes are very cheap, so do not put clumsy tools into the hands of thinners.

In thinning the worker should stand with one foot on each side of the drill next to the one to be thinned, and the plants to be removed are either *pushed* or drawn out of the drill. (the former is usually considered the better way), leaving single plants at say 10 inches apart, or at 5 inches if the thinning is to be finished at another time. Thinning turnips is light work, but it requires much skill and care to leave the plants single and yet uninjured. In Scotland and England women are preferred as turnip singlers, and in America, where the turnip crop is at all extensively cultivated, much of the work is done by children, who, however, are seldom sufficiently careful. Where children or young people are employed, premiums should be given to them for the best work. In England it is estimated that one experienced singler can thin half an acre of turnips in a day of ten hours.

The thinning being finished, the horse-hoe is sent through the drills, and when the singling is completed at once, another hoeing is given. When the plants are only half thinned at first, the second thinning answers to this, and should be carefully done, so as to leave the plants quite regular, and with their roots sufficiently covered. Finally the horse-hoe is again used, or the drills are slightly earthed up with the plough. The whole work is thus reduced to three or four ploughings or horse-hoeings, and two hand-hoeings, and the time occupied by these last need not, even for an inexperienced worker, be estimated at more than three days per acre.

We close this article with the following instructive extracts from Peters and Stephens:—

Hoeing and Cleaning.—This is the most important part of turnip culture, for manure as heavily as you please, if this is neglected, or carelessly or imperfectly done, you will not have a good crop; a few days' delay, carelessness, or inattention now, will make a difference of hundreds of bushels per acre. There is no crop on your farm which can so ill bear delay at this time as your turnips, and unless you can afford to throw away the labour you have expended, and to forego the benefit of a good supply of turnips for your stock, do this *when it should be done*, and *do it well*. If you are short handed, let every man, woman, and child, who can lift a hoe, or pull a weed, go to work in earnest, and the job will soon be accomplished; and, what is more, your children will become expert at turnip culture, on which all successful farming in this Island will, before long, depend: and remember that a good turnip hoer never takes his eye from the ground until called to dinner; recollect this yourself and impress it on the children, and there will be no stopping to talk, nor ceasing work to gaze at every passer by, by which so much time is often lost. The method I have found best in hoeing, is this: as soon as the leaves are between two and three inches long, run a plough between the drills, taking away the earth on each side to within about two inches of the plants, this will make a little ridgelet between each drill, and cover up all the weeds; and if the horse hoe is run about a week afterwards, they will be found quite rotten and form a good manure for the land; (some use the horse hoe only, but if there is much yar and weeds, the plough makes the best work.) Then set to work with the hand hoes, and thin the plants five inches apart: do not be afraid of stripping the roots of the plants, as the more they are exposed the better; when the plants are a good size, and the leaves begin to touch each other, a second hoeing must be given, cutting out every other plant; this will leave them ten inches asunder, taking away at the same time any weeds that are between them. This second hoeing is very quickly done. If the land is very weedy, the horse hoe should be run between the drills, once before the second hoeing, and once after, and this will complete the work.

The *distance between the rows* of turnips has been fixed, conventionally no doubt, at twenty-seven inches, which is a very convenient distance for drilling up the land in the first place, with the common or double mould board plough, for dunging it with the ordinary tilt cart, and for working the implements employed in turnip culture, such as the sowing drills, and the succeeding scufflers and drill harrows. The distances between the plants should be about twelve inches for the Swedes, and nine inches for yellow turnips and globes, and to insure regular and proper distances, the *singling* of the crop with the hoe should be regarded as one of the most important operations which claims your attention. For example, 5 lb. turnips at 9 inches asunder give a crop of 57 tons 12 cwt.; whereas the same weight of turnip, eleven inches apart give only a little more than forty-seven tons. Now how easy is it for careless people to thin out the plants to eleven instead of nine inches, and yet by so doing no less than 10½ tons of turnips are sacrificed.

We may add before leaving this part of the subject, that watering the turnip crop with liquid manure, not only remarkably aids the growth, but is a great safeguard against the depredations of insects.

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CORRESPONDENCE.

FOR THE FARMER'S JOURNAL.

Agricultural Communications and Agricultural Education.

HEMMINGFORD, March 30, 1856.

SIR,—Having seen a wish expressed in your columns, that you could meet with more correspondents amongst the Agricultural portion of the inhabitants of the Province,—I take this opportunity of addressing a few remarks to you. The reason that I conceive you have so much difficulty in obtaining communications is from the fact that farmers in general are not a literary class of men, being composed for the most part of persons who have emigrated to this country with limited capital, and who are only now just beginning to enjoy the benefits resulting from years of continuous labour and hardship, and from their having been used all their lives to incessant toil, they are little accustomed to even reading works of a professional nature, still less of writing upon professional subjects. Now, my object in addressing you upon the present occasion, is to point out the benefit which would result to the rising generation from a more general diffusion of the theory and practice of agriculture. It does seem extraordinary to me that of so widely practised and of so all important a profession as farming, so little should be generally known of its theory and principles, embracing as they do so much of chemistry, mechanics, and many other subjects which of themselves require years of study to become masters of; and that no steps are taken to provide any information whatever on a subject which affects alike the interest of every member of the community. Now, I think that something might be done to improve matters, if a library of well selected works were attached to each Agricultural Society throughout the Province, and further information might be pro

pagated by the institution of courses of lectures through the different Townships which might be delivered by competent persons, under the direction and supervision of the Board of Agriculture, and receiving a recompense from Government grants. I do not think that at the present time the country is in a fit state for the erection of agricultural colleges or schools, as labour is so valuable that farmers would be unable to spare their sons away from home for a sufficient time to prove really useful to them. But as the government is now exhibiting every laudable desire to encourage education in general. I think that some portion of their funds might be very usefully laid out in promoting this special branch, either by the means I have pointed out or by establishing classes for that purpose in different schools throughout each district. That the ignorance on these matters is a crying evil, there is no doubt, and if some initiatory steps are only taken, the best and easiest system of carrying out education in this branch on a wider basis, would then be discovered. The only difficulty I see, is getting any person to move in the matter, for, if once undertaken, I am certain that the people would gladly avail themselves of any means readily brought within their reach, and wonder that they had got along as they have done so long blundering in the dark.

I have the honour to remain your obedient servant,

FRANCIS DRUMMOND FULFORD.

W. Evans, Esq.

To the Proprietor of the Farmer's Journal, Montreal.

MY DEAR SIR,—I beg to hand you inclosed, an excellent letter, addressed to me by Francis Drummond Fulford, Esq., of Hemmingford, supposing, I presume, that I was connected with the *Farmer's Journal*. —May I hope you will be pleased to give it insertion in your valuable paper.

I perfectly concur with Mr. Fulford, as to the cause of the difficulty of obtaining communications from agriculturists for your Journal,—I experienced the same difficulty for many years, while I had the management of the Agricultural Journal. Mr. Fulford's suggestion in regard to Agricultural Education, and Agricultural Lectures, is entitled to favourable consideration, but I fear, it will not receive the attention it deserves. I have frequently endeavoured to attract attention to the same subject, but with little success. It is very commendable in Mr. Fulford, taking so much interest in our agriculture, and to write such a letter as the enclosed. I hope this example may act as an encouragement to other educated, and respectable young men, to give their views on the same subject. It would be a great advantage to agriculture, if it was to become a favorite occupation here, as it is in Britain.

Very truly yours, WM. EVANS.

Montreal, April, 1856.

There is no doubt much truth in the reasons adduced above by our Correspondent for the paucity of agricultural communications. We trust, however, that our readers will bear in mind that in such matters we attach far more value to sound practical facts than to merely literary merit. We would also remind them that the winter evenings of Canada afford to the farmer much time for mental improvement, as well as for making known to others the results of his experience.

All enlightened agriculturists must agree with our Correspondent in desiring better provision for education in the theory and practice of farming. We are aware, however, that much difference of view exists as to the means by which this can be obtained. For our own part, we hold that, not one only, but many means must be employed. The country may not yet be prepared for the establishment of proper Agricultural Colleges and Schools in connection with Model Farms. We cannot doubt however, that even now the Legislature would act wisely in providing for at least one such institution in Lower Canada. Under skilful management it would form a centre and nucleus for all other efforts. In the mean time, we may at least have the following agencies—(1) Our Universities and Colleges might establish classes in agriculture, offering their advantages on easy terms to young farmers during the winter months, and if they require aid for this purpose, the Board of Agriculture might assist either by giving bounties or scholarships to the most successful pupil, or by providing the necessary apparatus, &c. (2) Agricultural chemistry should be taught to the pupil-teachers in our contemplated Normal Schools. They might then, with the aid of text books which may be readily obtained, teach this subject in their schools or open evening classes. (3) These agencies could scarcely fail to produce some young men qualified to become itinerant lecturers under the Board of Agriculture. Provided with a portable apparatus, they might in the winter months pass from settlement to settlement, bringing before the mental vision of young and old the new lights which modern science has cast on the most ancient of arts. (4) Under the auspices of such men, and of other educated agriculturists, meetings for discussion might be organised in connection with the Local Societies; and Farmers' Clubs and Libraries might be established. (Lastly) Lectures and discussions in such meetings might be published in our Journal, for the encouragement of others and the diffusion of new facts in agriculture. Such agencies, acting and re-acting on each orher, will constitute a combined effort in the direction of improved agriculture that must speedily be felt throughout the Province. Let any of our higher institutions of learning institute in the next winter a school of scientific agriculture, let the subject be thoroughly taught in the Normal Schools which we hope will be in operation before the close of this year, and let the Board of Agrieulture devote a small sum to aid in such efforts in any way that circumstances may render expedient, and the point of the wedge will be entered.

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Onions and Squashes.

We cannot say that we have much experience in cultivating onions or squashes on the large scale; but the success chronicled in the following extract from the *Massachussetts Ploughman*, shows that under the care of our New England neighbours, these vegetables, form no small source of profit. The manure used was sea-weed, but well rotted manure or compost with a dressing of guano, would almost exactly represent this.

Mr. Brown had eight acres of land in onions: the largest lot containing about three and a half acres. This is in the underdrained field exhibited in the Transactions of the Society for 1854. A portion of this lot, (viz, that part which before under-draining, was covered with stagnant water much of the year,) say from one-fourth to one-half an acre, has now upon it the greatest yield of onions, beyond all controversy, ever raised in the county of Essex. Mr. B.'s estimate I believe was 1000 bushels to the acre for this spot. I cannot estimate it at less than that, and indeed find I had marked on my memorandum as high as 1200 to the acre for the spot referred to; and in my present estimate of 1000 bushels I am fully sustained by several gentlemen, Trustees of the Society, who visited and examined this field just before the onions were pulled. They were then lying upon the ground and perhaps seen to better advantage. This amazing yield, it is true, is confined to a comparatively small spot; but if the whole eight acres shall be found to have less than 5000 bushels of marketable onions, I shall be disappointed. The average would be 625 bushels, and as that amount has not unfrequently been reached in the county, I cannot believe it too high. The manure was chiefly the decomposed kelp before mentioned, ploughed in with a small quantity of

compost manure. Mr. B.'s usual quantity of the kelp is 8 to 10 cords to the acre, but in 1854 he put on 12 cords per acre, and undoubtedly that extra amount is felt in this year's crop although some fields have suffered by the drought.

A lesson is to be learned from the fact, that upon one side of the under-drained field, for perhaps thirty rods, the last year's crop was *turnips*—and there the onion top is yet somewhat green; but where the onion follows a *carrot crop*, it is nearly as ripe as when following onions themselves. The onion rows in this and all other lots, are fourteen inches apart.

Other fields in onions presented crops every way equal to the one above described, with the exception of the quarter or half acre particularly described. One of these fields, now partly in grass, was taken out of the pasture in 1836.

Mr. Brown has five acres in squashes. One measured acre has this year produced ten wagon loads, of one ton each. The squashes are now all stored in lofts well ventilated, lying two deep, and they afford a sight worth any man's ride of a dozen miles to Marblehead to see. Of the five acres in squashes, two are of the pure Marrow. These weighed thirteen tons, and they are a splendid exhibition of this delicious vegetable. Of another squash, however, resembling the Marrow, but regarded by Mr. Brown as inferior to it, being a mixture of the Marrow and Indian squash, he has produced 13½ tons from one acre! It can be afforded for two-thirds, or perhaps half the price of the Marrow. On inquiry, it appears that the destructive yellow bug, so dreaded everywhere, and which is usually destroyed by killing, troubles Mr. B. but little. He uses lime. A cask or more is slacked in the usual way, only as dry as possible, and while it is hot is sown broadcast, in a favorable wind, over the vines.

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Fish Manure and Animal Refuse.

All animal remains furnish very rich manures, and are especially valuable when mixed with a large quantity of earth or mould, through which their fertilizing properties become diffused, and in which, by their action on the air and on the materials of the mould itself, they develope new materials for enriching the soil. The following article from the Transactions of the Highland and Agricultural Society, may give some useful hints on this subject.

Although the importance of all sorts of animal matter as a manure has long been familiar, and has been frequently insisted on both by science and practice, the immense quantity of such refuse has hitherto become very partially available. The main difficulty which has stood in the way of their profitable application has been the want of a good process by which they can be converted into a portable form. The enormous quantities of fish-refuse annually produced in Newfoundland, and even on some parts of our own coasts, has been frequently pointed out as a source from which agriculture might derive valuable assistance. Considerable interest was excited some time since by the proposal of various methods by which the desirable object of rendering fish offal portable might be attained, and very important results were anticipated from them. As yet these anticipations have not been fulfilled, material difficulties having been encountered in carrying most of the processes into operation on the large scale, some of the plans proposed having proved too expensive in practice, while others are so obviously unpractical that no one has been found willing to invest capital in carrying them out. The error in most cases has lain in the employment of expensive machinery, which the conditions under which such a manufacture must be carried out may be said to preclude. It is probable that the quantity of fish offal to be obtained at any one spot will not generally be very large, and will be collected at one period of the year, so that the machinery would require to be sufficient to work up with rapidity the whole of the offal produced, and would lie idle during the rest of the year. It is in some such way that most of the plans have hitherto failed; but I have recently analysed a sample made by a patent process, which is said to be simple and inexpensive; and should the manufacture yield on the large scale a material of uniform quality, and equal to that I have examined, it will undoubtedly prove a very important addition to the list of ammoniacal manures.

The manure was in the form of a yellowish powder, in grains about the size of fine oatmeal, remarkably uniform in appearance, very dry, and almost devoid of smell. Its composition was:—

Water, ...	8.00
Fatty matters, . . .	7.20
Nitrogenous organic matters,	71.46
Phosphate of lime, . .	8.70
Alkaline salts, . . .	3.80
Silica, ...	0.84
	100.00
Nitrogen, ...	11.25
Equal to ammonia, . .	13.65
Phosphoric acid in the alkaline salts equal to 1.41 phosphate of lime, . .	0.65

This analysis recalls to mind that of a flesh manure manufactured by Messrs Turnbull & Company of Glasgow, an analysis of which appears in the *Transactions* of the Society (New Series, vol. v., p. 203.)

There can be no doubt, that if fish manure, of equally good quality, can be produced, a large demand for it will soon be created. It is, in fact, a very valuable manure, and its price may be estimated very readily, according to the mode employed for Peruvian guano, by taking the commercial value of each of its important manurial constituents as derived from other sources. The values usually adopted by chemists have been at the rate of 0¾d per lb. for phosphates, and 6d per lb. for ammonia; or, expressed in tons, £6 for the former, and £56 per ton for the latter. Upon this plan, and taking all the phosphates under one category, we estimate the value of 100 tons of the fish manure as follows:—

13.68 of ammonia at £56, . . .	£766
10.11 of phosphate of lime, at £6, .	60
Value of 100 tons, ...	£826

or almost exactly £8 5s per ton; and this will probably be its average value. At the present time, however, owing to the high price of bones and ammonia, its value would considerably exceed this. Sulphate of ammonia is now selling at £16 per ton, and at this price *ammonia* is worth £64, and phosphate of lime can scarcely be reckoned under £10 per ton, bones at present selling as high as £6 or even £6 10s. If these data be taken for calculation, the value of fish manure comes to be:—

13.68 of ammonia at £64 . . .	£875
10.11 of phosphate of lime at £10,	100
Value of 100 tons, . . .	£975

or £9 15s per ton.

In connection with this subject, it may be well to observe, that there are many sources of animal matter which must, at the present moment, be entirely wasted, although they might, with a little management, be turned to good account. Of these perhaps the most prominent is the blood and other offal of slaughter-houses in our small towns and villages. In the larger towns the blood is collected, although not very carefully, and finds its way to certain classes of manufactories in which it is employed; but in country places it is for the most part allowed to escape. It would be a matter of some interest to ascertain the annual value of the blood and offal thus lost, which is undoubtedly very large, and a great part of which might easily be saved by a very small expenditure of care. Such, however, is the carelessness of the workmen employed in slaughter-houses, that I have been informed, that even in the large towns it is with difficulty that they can be persuaded to save the blood, although its price is really considerable. Fresh blood contains nitrogen equal to about 3 per cent. of ammonia, and is worth about 2d per gallon, or nearly £2 per ton; and any farmer living near a small town might advantageously contract to take the whole of the blood at this price.

There are many other sources of animal matters which will at once occur to our readers as available for manures. Of these we may particularize the refuse of glue and oil-boiling works, which yield annually a considerable quantity of nitrogenous offal; and the two analyses of seal and glue refuse which follow will show that, even when they are prepared without much care, they may become useful manures:—

	Seal Refuse.	Glue Refuse,
Ash, . .	36.81 ..	53.18
Organic matter,	41.85 ..	38.60
Water, . .	21.34 ..	8.22
	100 00 ..	100.00
Ammonia,	2.24 ..	2.00

The large quantity of ash in these cases is due to the admixture of earthy matters for the purpose of drying up and rendering portable the animal matter; and though this has not been done in the most suitable manner, the value of the manure is about five times as great as that of good farmyard manure.

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Receipes and Good Things.

A "farmer's wife" sent the following good things to the *Rural New Yorker*, from which journal we copy them:—

Crackers.—Three quarts flour, 1 cup of butter, 1 pint water, 1 tablespoon salt. Pound until the dough snaps.

Another.—One pint of cold water, 1 teacup of lard, a little salt, 2 teaspoons of soda (or saleratus)—dissolved in a little vinegar; work in flour with your hands until quite hard; bake in a quick oven.

Doughnuts.—Take 7 coffee cups of bread dough when light, mix into one and a half cups of melted lard, with one of sugar, and a teaspoonful of saleratus; when it has again become light, roll it out, cut into what shape you please, and boil in hot lard. To succeed well, the dough should be mixed with milk.

A very Nice Fruit Cake.—One pound sugar, half a pound of butter, 4 eggs, 1 teacup of sweet milk, 3½ cups of flour, 1 teaspoon of saleratus, nutmeg, cinnamon and cloves—as many raisins as you can afford.

Cup Cake.—Five cups of sifted flour, 2½ cups of white sugar, 6 eggs, 1 cup of butter, 1 of sour cream, 1 teaspoon of soda, nutmeg. If sweet milk is used instead of sour cream, put in two teaspoons of cream of tartar.

Hard Gingerbread.—Two cups of molasses, 1 of buttermilk, 8 tablespoons of melted lard or butter, 4 teaspoons of saleratus, 6 of ginger, a little salt, flour enough to roll (not very hard.)

Cinnamon Cakes.—One cup of sugar, 1 of molasses, 1 of butter, 1 tablespoon of ginger, 1 of cinnamon, 1 of saleratus, dissolved in half a cup water—flour enough to roll; to be rolled very thin and cut in round cakes.

Cookies.—Two cups of butter, 2½ of sugar, 4 eggs, half a teaspoonful of saleratus, caraway seed, flour enough to roll—made very thin.

Cream Cookies.—Two eggs, 2 cups of sugar, half a cup of butter, half a cup of sour cream, 1 teaspoon of saleratus, caraway seed, 2 teaspoons cream of tartar—flour enough to roll.

These receipes I have used for some time, and find none better. If persons who try them do not succeed, they must blame themselves alone, if they have good material.

——:o:——

Pruning Apple Trees.

Now, don't, kind reader turn up your nose, because your theory differs from mine. What does the doctor do when he amputates a leg! O, he *dresses* it carefully as possible. Very well. So do I dress a limb of a tree after it is sawed off, and common sense requires it as much in one case as in the other. But I find it pleasant, as well as convenient, on a leisure day to go out and trim off the shoots and dead branches, and when a warm day comes in spring; I go all over the orchard with a ball of grafting wax, or some shellac dissolved in alcohol, and cover every wound. If you are not willing to do this, then don't prune till the leaves are set, or, which is, perhaps better, till September or October, which with me is a very busy season. I see where I have practised pruning and dressing in years past, as I have described, that the bark is lively, and the healing process is going on all around the wound, a point of the greatest importance. My theory on this subject, is to take care and dress your wounds, make them when you will.—*Cor. N. E. Farmer.*

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Plant your Potatoes Early.

Let those who are not yet satisfied that this is a good rule, plant a few rows or a small patch as soon as the soil is dry enough to work well, and the balance of the land intended for this crop either all at once a few weeks afterwards, or in portions at intervals of a week or so between each planting. Of each planting let a square rod or some other area or measure be taken, and let the result at harvest-time, both as to *quantity* and *quality*, be carefully noted. The result, we are confident, will prove interesting and instructive, not only to those who try the experiment, but also to many who, like ourselves, would be glad to have a report of the experiments and the results given to the public through this paper.

Until such experiments are made, and the results made publicly known, those who endeavor to conform their practice to be best ascertained facts, or best established rules, will plant early. Experiments have already been made in sufficient number and with sufficient accuracy, to make it almost a settled matter that potatoes planted as soon as the soil is mellow and dry, will yield a more abundant and sounder crop than the same kind of potatoes on the same or similar soil, when planted 10, 20, or 30 days later. The most satisfactory of such experiments which have been reported to the public are those of Mr. H. H. Eastman, of Marshall, Oneida, Co., N. Y., a summary of whose various experiments in potato culture may be found in the vols. of *The Country Gentleman*, and *The Cultivator* for 1855. For the sake of those who have not these vols. at hand, we may say that to test the question of early, medium, and late planting, one plot was planted, in 1852, on the 18th of May, another on the 23d of May, and another on June 8th, and these plots yielded respectively at the rate of 142, 131, and 100 bushels per acre. The experiment was again tried in 1853, and resulted as before in favor of early planting. While those planted May 9th yielded 104 bushels, those planted May 30th gave but 70 bushels, and those planted as late as June 18th gave only 45 bushels per acre.

Previously to the invasion of the rot, potatoes were generally planted in June; but the old rule must now be laid aside, and the new one at the head of this article substituted in its place, in order to secure the best crops.—*Country Gentleman.*

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Good and Ill Treatment of Hens.—Hens, we find, are like soils and some other things with which the farmer has to do,—they treat him very much as he treats them. If he treat them in a liberal and generous manner, they make him quite liberal and generous returns. If he neglect them, or provide for them but sparingly, the returns they make will be correspondingly scanty.

All this one may be aware of, may readily assent to, and yet may practice as if repeated experiences had never confirmed its truth. We have long been firmly persuaded of the truth of the proposition with which we began, viz., that hens will furnish eggs very nearly in the same measure that they are furnished with food, lime, &c. &c.; but this truth never made the deep impression which it did when some facts giving evidence and illustration of it were brought under more immediate observation. The hired man at one place was working and conversing with the hired man on another farm, when one of them happened to mention something in regard to the nice eggs which he had every day. The other said that at the house where he lived they had scarcely had an egg all winter.

This great difference in two neighboring flocks having attracted our attention we made some inquiries as to the modes of management, and in the difference in that respect we found a complete explanation of the difference between half of a whole flock laying every day through the winter, and another flock of the same breeds furnishing hardly a single layer. In almost every particular in the management of these two neighboring flocks there was a very marked contrast. For example, while the one had only a small space in the upper part of a pretty open stable into which both wind and snow could find their way quite freely, the other flock had their roosting place in a warm, well sheltered barn-cellar which was open to the south, and closed on all the other sides. And while the one was thus much better defended against the winds and cold of wintry *nights* than the other, there was as great a

contrast in their opportunities for comfort during the *day*. While the one had nowhere to scratch or exercise during the long months while the earth was covered with snow, save the top of the manure heap, or the inside of the stable while the cattle were out of it during the day, the other flock had abundance of room and chance to scratch and exercise in lots of lime and gravel and leached ashes with which the floor of the open cellar was kept well supplied. Then, again, while the one never had a drop of drink of any kind, the other had water, and milk with pieces of buckwheat cakes, potatoes, and other fragments from the table soaked in it, every day. And, as to food, while the one had only a small portion of corn once a day, the other had a great variety, and that regularly twice a day. To provide the fowls of the latter flock with lime so essential to the formation of shells, they were supplied with a shovelful every day from a large box of lime, sand and gravel, which had been provided for this purpose, before winter, and also with eggshells pounded and mixed with other fragments from the table. The reason why eggs were scarce in the one case and plenty in the other, was obvious enough when these items in treatment were made known.—*Country Gentleman.*

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Value of Urine.—An experiment which goes far towards demonstrating the great value and efficacy of urine when used manurially, was published not long since in an English paper. We present it in the author's own words:—

A box of fine white sand was exposed to a heat sufficiently intense to dissipate its moisture and destroy every particle of organized matter it contained. It was then placed in a dry situation, and some seeds of the Egyptian wheat being planted in it, the whole mass was saturated with urine in a state of incipient putridity. The result of the experiment was that the wheat vegetated—grew rapidly through the season, and in autumn, rather before the maturation of the same grain in the open fields, produced a remarkable yield of fine and well developed grain. The application of the liquid was made weekly during the season."

Such facts have an important significance, and should be recorded and carefully pondered by the agriculturist.

Windham, Me., April, 1856.

[In our last we gave a method for saving and applying urine and other liquid manures. The above experiment is an excellent evidence of their efficiency in the growth of wheat. Let any farmer who is sowing wheat on land not likely to yield a large crop, try the method on a large scale, by weekly, or as often as convenient, going over every *alternate* ridge with a watering cart and liquid manure. We shall be glad in autumn to have a statement of the yield of two neighbouring ridges; and we think we can venture an assurance that the experiment will be found to pay.]

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Thick and Thin Seeding Oats.—Last year about the close of April, I sowed 12½ acres to oats. Eight acres had been planted to corn the year previous, and one-half of it manured with stable manure, which was plowed under in the fall. Of the remainder, 2 acres were after oats, and 2½ clover sod, broken up just before sowing. The whole was plowed from nine to ten inches deep with a Michigan double plow, and in good though not extra order.

The oats I sowed broadcast at the rate of 2½ bushels per acre. We harvested 740 bushels by measure, and I doubt very much if a larger yield would have been the result had less seed been sown. The straw was large and the oats on the sward, which was the richest part of the land, lay flat on the ground. For the field, which is the poorest on the farm, I think the crop an extra good one. Your correspondent "B," from less than 2 bushels harvested about 40 per acre—we, from 2½, nearly 60. His experiment does not prove the theory of thin seeding true; nor does mine disprove it. There are two sides to the question.—*Rural New Yorker.*

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Meteorology.

The philosophic minded Bacon has said that it is the province of man to interpret nature. There is certainly no more worthy study for the reflective mind than to trace the laws which guide the ever-varying changes of the atmophere. To the agriculturist, these are peculiarly interesting, as it is upon climatic conditions, no less than those of the soil, that the success of any cultivation is dependent. With an extended knowledge of the climate conditions of any district, it is doubtless possible to so select varieties of any of our cultivated plants, as to extend the region which is at present deemed its profitable limit of cultivation. A better acquaintance with the character of the climate would prevent most of those mistakes which are daily committed by agriculturists, who, familiar with the system of cultivation of one district, and believing it equally applicable to others, make the experiment, and find themselves disappointed. Hence failure followed by loss, which, when persevered in, almost invariably leads to an irrecoverable sinking of the tenant's capital. If the climatic laws were better understood, the peculiar system of cultivation pursued in a district—doubtless the result of the experience of many, and the gatherings, as it were, of success out of numerous failures—could be explained, and suggestions made for the further development or improvement of the systems. The knowledge thus obtained could be rendered available in introducing improved systems of culture to any district. Climatic causes operate with equal, if not greater power, upon animal life. That remarkably correct observer of Nature's phenomena, Shakespere, makes frequent reference to this.

To understand the language, and to interpret truthfully the physical combinations which produce wind and rain, vapour and cloud, heat and cold, it is necessary to collect fact after fact, and, as it were, letter after letter, to form syllables, and by this gradual process, acquire that elementary information, which will enable us to read the volume which is spread before us. But to attain to success, a certain uniformity must be observed, and the collecting of data must be undertaken in a methodical and well arranged plan. Not only must uniformity be observed in the noting, but the instruments employed must be similar in construction, placed under the same circumstances, and, as far as possible, without any disturbing causes.

In the *Journal d'Agriculture Pratique*, Paris, there are published monthly the meteorological observations made over the various parts of France, which seem to embrace a wide area. The system which is there followed, appears to us very complete, and with a slight change might be advantageously adopted by observers in this country. It would facilitate observations, were printed schedules upon this plan issued. The first column contains the date of the month, the second the changes of the moon, and for each class of observations, there are separate tables, each being provided with the same two introductory columns. The fall of rain is intimated by decimal centimetres. The sunlight is marked by dots; these, when bright, show uninterrupted sunlight; one-half obscure represents partial sunlight; and dark, total obscuration. Thunder storms are added to these columns—a circular figure, with two diagonal lines, representing storms. The direction of the wind is indicated by letters, corresponding to the initial letters of the direction. The thermometer is marked by the two extremes. At the end of these tables are given notes containing any remarkable phenomenon which has been observed, and the editor adds one or two tables, showing the extremes of temperature, and some other points deducible from the returns. Those interested in the subject, can examine these tables as published in the French Journal, and if the Association is to take steps to carry out a system of observation over the whole of Scotland, some such method as has been indicated above, might be resolved on. In the meantime, we would recommend to agriculturists to take more interest in the successful prosecution of meteorological observations than has hitherto been bestowed on this department of natural philosophy.—*North British Agrioulturist.*

TO DESTROY BARK LICE.

Take strong lye, and put in it as much salt as will dissolve, and wash the bark of the trees with it by means of a brush or swab. It will kill the lice, and they will soon rub off. The best time to apply it is in the spring before the buds start, as it will kill the young leaves. It will answer any time, if kept from the leaves.

[Another way is to scrape the bark, then wash with lime, and dig in around the roots a quantity of well rotted manure, to give a vigorous growth. We have found this treatment capable of reviving trees apparently nearly dead from the spread of the bark lice.]

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NEW ENGLAND FARMERS' WIVES.

Perhaps the following lesson may not be useless in Canada :—

Thrifty beings they are, and in their anxiety to do their whole duty by hard-working husbands, with a self-denial too little appreciated even by its objects, they wear their lives away in endless and pitiless drudgery. Pride is nearly as much concerned in the matter, as affection. The pride of the housekeeper—which in this overflowing land loves to provide an actually wasteful profusion of substantials and "good things" for a family of children and farm-assistants. And the pride of bearing on one pair of shoulders the burden of two or three, and at the same time of doing everything a little better than anybody else *could* do it. This is the peculiar pride of an American, whether man or woman— to *do*, *keep* doing, and do *well*. Under its pressure many a Yankee mother, amidst the rugged hills of her native land, many a country house-wife in the fertile districts of the middle States, the wife of many a sickly pioneer in the western country, has consumed her best years, bearing all things and complaining never. There is something noble in the self-sacrifice. We would not discourage economy nor decry labour. But let the mother of a family remember the duties she owes herself and her children, as well as the tasks expected at her hands. Let the husband be careful to lighten and alleviate them. Let him not compel her to find the straw, as well as fill to full tale of brick.

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Agriculture in Lower Canada.

If any proof was required to convince us that Lower Canada was capable of producing excellent wheat, barley, oats, peas, beans, timothy seed, &c., the Exhibition of these grains on the 25th of March, in the Bonsecours Market, at the instance of the County of Montreal Agricultural Society, would demonstrate the fact in the most satisfactory manner. The samples, which, I believe, consisted of about 20 bushels each, were numerous, and I may confidently say, there never has been a better show of these grains in this country, than upon that occasion. There was no wheat exhibited except spring three months' wheat, of the variety Fife and Black Sea, all of which were of very superior quality, clean and unmixed. Of course, spring wheat could not be expected to compete in appearance with choice samples of fall wheat; but with this exception, I have no hesitation in stating that the grain of every description exhibited on the occasion alluded to, would compete favorably, and, I have no doubt, successfully, with any samples of the same varieties that could be produced in Canada West, or in the United States. I have had opportunities of seeing exhibitions of grain in both countries, and, as I have stated, with the exception of fall wheat, I have no doubt Lower Canada can compete successfully with any part of North America in the production of any other grain, and also in hay, and every variety of root crops. I admired particularly the samples exhibited, for their perfect cleanness, and appearance of being unmixed. The Montreal Agricultural Society are entitled to the thanks of the agriculturists for this judicious move, and I hope they will have an annual exhibition. The premiums paid were very liberal, and amounted to about £45. The greater part of the grain was the production of the Island of Montreal, though the first prize wheat was from the Isle Jesus. I allude to this exhibition of grain as an encouragement to agriculturists to introduce improvements in their system of husbandry, where it may be required, as it must be in every instance where there is not favourable and remunerating results obtained from farming. We may be assured, if we take the trouble to enquire, that the excellent samples of grain exhibited at Montreal on the 25th of March, was not produced by chance, but that in every instance, good samples resulted from skilful and judicious cultivation and management; and any farmer who desires to produce similar samples of good grain, will be certain to succeed, provided he adopts the same skilfull and judicious cultivation and management of his land. These are evident facts that cannot be controverted. The successful agriculturist has the same climate, and generally no better soil than the most unsuccessful agriculturist, and, therefore, the very different results obtained by each from their land and labour, results solely from the cultivation and management of the soil. Farmers need not expect to excuse their want of success, by complaining of insufficient capital, &c. I have known many persons here, who, with scarcely any capital to commence with, have succeeded in making themselves very comfortable, if not independent, and altogether by their skill, industry, and good management in agriculture. Any excuses for bad management in the practice of agriculture should not be admissible, while better management is possible. It is quite absurd for a farmer, when he witnesses the successful practice of another farmer, to suppose that he could not adopt the same practice. The feeling that should animate and predominate with every agriculturist ought to be a desire to equal, if not excel, those farmers who practice a judicious and successful system amongst them. I cannot understand why any farmer should rest contented with raising only one-third or one-half the produce, which he sees another farmer can raise with the same climate, and on soil that is not naturally better than his own. If I see my neighbour's land well drained, well ploughed, sufficiently manured, good crops growing upon it, free from all weeds, live stock of fair quality, provided with sufficient pasture—while my own land is not well drained, is not ploughed in the best manner, has not an adequate and regular supply of manure judiciously applied, my crops not very abundant or clean of weeds, my live stock not of good quality, or sufficient pasturage, surely I cannot be at any loss to account for the different results obtained by my neighbour and myself. Hence it would appear, that there is not in reality any excuse that our system of agriculture is not generally better than it is. I am sorry to be obliged to admit, that what we should understand as good farming, is the exception, and not the rule in Lower Canada; nevertheless, there are sufficient specimens or examples of good farming in every district, to show what it is, for our instruction, and this removes all ground for excuse for continuing a defective system of husbandry, because we can see before us continually, the practice, and the results obtained from good husbandry to encourage us to follow the example. It may probably surprise farmers, when I tell them, that the productions which are obtained from the most defective system of husbandry, and the least expenditure of labour and capital, costs the farmer more per bushel, than the production which results from the most perfect system of agriculture, and the ample but necessary, and judicious expenditure of capital and labour, practised in Canada. The farmer who is able to raise a produce of 30 bushels of wheat per acre, and of other crops in the same proportion, can do this at less expense per bushel, than it will cost the farmer per bushel, that will only raise 8 or 10 bushels of wheat per acre, and of other crops in proportion. If we compare the average produce obtained per acre by one of our best farmers, with the average per acre obtained by the great bulk of Canadian agriculturists, who practice a defective system, we shall be able to form some estimate of the great advantage of a good system, and the very great loss to the country generally, which results from a defective system of agriculture. I would be the last who would recommend a large and extravagant expenditure of labour and capital in agriculture, because I know that beyond a certain limit it would not be expedient or profitable to do so. In fact, capital should only be applied as far as its employment *lowers the cost* of agricultural production. This is the grand

secret of all improvement, and where the cost of production is not actually diminished in proportion to the expenditure, I would not consider it an improvement in agriculture. The skilful agriculturalist, who employs capital or labour judiciously in the cultivation of land, is sure to diminish the cost of production, or as I before observed, he will raise a quantity of produce from his land and labour that will not cost him near so much in proportion to quantity, as it will cost the farmer, in proportion to quantity, who raises the least produce. In the present circumstances of Canada, if we desire to maintain the credit of the country, and the high character we have attained, the improvement of agriculture is no longer a matter of choice or fancy, but a matter of comparative necessity. All the great things that have been done for us, and the fine things that have been said of us, will be of little avail, if we do not help ourselves, by making a good use of what has been done for the encouragement of agriculture, and thus proving that we are not unworthy of the high character we have attained with the world. We should endeavour to come up to the full standard of perfection in our system of agriculture, when we have abundant examples of a system that is very near perfection. I think I am perfectly justified in stating, that upon a well managed agricultural establishment, of which there are a great many to be seen in the British Isles, if not in Canada, the practical art of agriculture, in every department, including the management of land, the live stock, and the implements employed, are as well understood, and brought to as great perfection, as is the produce of any other art or manufacture practised in Britain. The improvements in agriculture are decidedly good, both as regards the increase of quantity and the improvement of quality,—and this is more than can be said in relation to all other arts and manufactures. There is no manufacture practised by man that can compare with an agricultural manufactory that is well conducted, in the excellence and perfection of its productions. There is no deceit or deception in a fine animal, or in the productions of a well managed field or garden. I have never seen any of the products of manufacture brought to so great perfection, and so free from deterioration, as the products obtained from a perfect system of agriculture,—where the animals of every variety are of perfect form, and adaptation for their several uses,—and the products of the field, of the finest quality, without any deteriorating mixture. We cannot bring our oxen to the size of elephants, nor would it be advisable if we could do so,—nor can we bring the grain of wheat to be the size of a horse bean, and I believe it would not be an improvement if we did. Animals, and field productions are, however, brought to a high degree of excellence, if not to actual perfection, and if this can be accomplished by many agriculturists, I cannot see why it should not be possible to all, who would employ the same means, with a favorable climate, and a naturally good soil. I mention these circumstances because agriculturists are often taunted as being behind this age of progress, in the improvement of their art. No doubt many farmers are very backward, indeed, in adopting the necessary improvements in their system of husbandry; but I am persuaded, nevertheless, that agriculture in numerous instances, has attained greater perfection than any other manufacture that we are acquainted with. This is an important point achieved, in favour of general improvement. And it is no wonder that agriculture should have been brought to this great perfection. In the British Isles, the best educated and the most wealthy of the community are engaged in agriculture, and connecting science with practice, work it out in the most judicious and successful manner; and thus, by their capital, experiments, and example, instruct and encourage tenant farmers to adopt improvements that are proved to be advantageous. This is a proof of the vast importance of education to agricultural improvement. Without any wish to give the slightest offence, I may submit that uneducated men certainly may be induced to adopt improvements which they can see practised successfully and profitably before them; but improvements in agriculture seldom originate with them, though they may work them out when they have a good example before them. Agriculture is a science thut can be best explained by actual experiments in the field, and it would not have attained to anything approaching its present perfection in Britain, were it not for the lead taken by the wealthy and educated, by having these experiments judiciously made, both in the field, and in the management of their flocks and herds. It is from these circumstances only that agriculture, in all its branches, is brought to greater perfection in Britain than in any other country, so that it has become the admiration and example of all the civilized nations of the earth.

The subject of education has been fully discussed lately in the Legislative Assembly; but I was surprised to see no allusion to the necessity that agricultural instruction should be directly provided for in the system proposed. No wonder our youth should not estimate very highly the occupation of the agriculturist, or regard it as a respectable profession. He perceives from his childhood that education is highly prized, and considered actually necessary for the successful practice of any respectable profession, or even handicraft trade; but for the occupation of the farmer it does not appear to be an essential qualification, and he therefore despises such a profession, as only fitted for the most ignorant and illiterate. I have frequently endeavored to show the injurious effect on agriculture that the youth of the country, who do receive education, are more disposed to other professions than to be agriculturists. This I attribute partly to the course of education they receive, wherein the science and practice of agriculture is never mentioned or alluded to, no more than if there was no such science to be learned; also, to the circumstance of witnessing in numerous instances the defective practice, and unfavorable and unprofitable results obtained from agriculture. All these causes operate unfavorably upon educated young men, and lead them to suppose that farming is only fit for the ignorant and laborious, or for the wealthy classes, who engage in it for the pleasures and amusements of a country life, and work the farm by hired laborers. It must appear strange that, although five-sixths of our population have to make their living by agriculture, there is no direct means provided for instructing them in the science and art of agriculture, except what they may learn from those who are not the most capable of instructing them. Every other profession and occupation has a suitable education provided, that has direct reference to their future pursuits, while agriculture is denied any similar advantage. Schools for the rural population should at least be furnished with standard and suitable books on the science and art of agriculture, and these books should form a part of the study of every male scholar. There are excellent Agricultural Catechisms, and other books on the subject might be selected which would be plain and easy to comprehend. At all events, such books would convince the scholars that there were means of teaching the science and art of agriculture as well as any other art or profession, and it might have the effect of giving many a taste for agriculture, and a desire to understand it thoroughly, which they are never likely to feel, if their education has no reference whatever to it. We should also have properly qualified persons to deliver practical lectures on the subject at all our colleges and schools. However agriculture may be despised and neglected, it is an occupation, above all others, which we cannot do without, and therefore it will be for the general benefit of the community that it should be understood and practiced in the most perfect manner that is possible; and if we are in earnest in our desires that our agriculture should improve and flourish, we must give it importance and respectability by a direct education for it at our schools and colleges. Of course the properly educated can duly appreciate the importance and respectability of agriculture, and do not require to be told that it is the most important and most honorable, because it is the most useful and necessary of any art or profession practised by mankind, and is more particularly dependent for successful results upon the goodness of the Creator,—after man has executed properly the part which falls to his lot to perform.

I have now endeavored to give a truthful picture of the present state of agriculture in Lower Canada, and offered suggestions for its amelioration. Many parties who take

the trouble to read my communication may think I have made matters appear in a more unfavorable light than they are in reality, and I wish sincerely that I may have done so, and there will be less necessity for improvement. I have had frequent opportunities of knowing the country, and the stock and crops of the farmers, and could not help imagining how much room there was for improvement, and what a great advantage it would be to make the required improvements. Throughout the Valley of the St. Lawrence, and in many other sections of the country, the general quality of the land, and its adaptation to agriculture cannot be surpassed in any part of North America, and there cannot be any doubt whatever that a large proportion of this land is not managed to the best advantage, and does not produce anything near what it is capable of producing. We are most anxious for the extension of commerce and trade, and I advocate the improvement of agriculture as the only certain means to promote and support commerce and trade, by the increased annual produce it would create. Traffic in foreign productions will never augment to any great extent the general wealth of a country, and we may assure ourselves that the wealth of Canada will chiefly depend upon her own productions, obtained from her land. It is these productions which directly and indirectly provide the means for paying almost all the claims against the country, whether for revenue, or imported goods. From any other source except the land, ne need not expect much assistance in this country under existing circumstances. If this proposition be admitted, and I think it cannot be disputed, how much does it behoove every lover of his country to lend his aid, and every influence he can exercise, in promoting improvements in which all are interested. I wish it was in my power to indace others to view this subject in the same light I do. If it was a political subject, or any other on which I might be mistaken, I would not presume to have kept it constantly before the public, as I have done, for the last quarter of a century. It may be replied to me, that if my views, or suggestion I presume to offer, were considered of that importance which I attach to them, they would be immediately acted upon by those who have the power to do all that is necessary for agricultural improvement.

We have many able men in Canada, who could do wonders for agriculture, if they would only be persuaded that they could not devote their talents or eloquence to any subject of so much importance to the whole Canadian community. Perhaps it may not be thought offensive, if I express my regret that when reading the debates in our Provincial Parliament, and admiring the eloquence of many of the speeches reported, I scarcely ever meet with one sentence that has any reference to agriculture, or its state, and requirements. As the humble advocate for agriculture, it would be a most gratifying "sign of the times" if I could only see a small portion of the eloquence expended on other subjects given to the cause of agriculture, and to recommend its improvement to the rural population. If this population was only to learn, that their representives in Parliament occupied themselves with the consideration of the interests of agriculture, and made eloquent speeches upon its vast importance, and the advantages to be derived from its improvement to the uttermost, we should soon see a change for the better, and the occupation of the farmer regarded with more favour. Our Legislature may certainly have numerous interests to occupy their attention to, but I humbly conceive that there is not one of these interests, that is to be compared in importance with that of agriculture, which is the occupation of the great majority of those who have elected the members of the Legislative Assembly—and as their representatives, agriculture is entitled to every possible attention to its interests so far as they can be promoted, without injustice to any other interests.

I cannot better or more appropriately conclude this communication, than by copying a few lines from a late number of that excellent newspaper— *The Mark Lane Express.* Farmers I know are generally disposed to feel profound gratitude to the CREATOR for His never failing goodness, in the annual increase of their field, their flocks, and their herds— which has continued from the creation of man, to the present time— and they may with perfect confidence rely upon a continuance of the same goodness.— "We should feel that we had very inadequately noticed this period of the year if we neglected to remind our readers, of the agricultural class, of the source from which they derive their prosperity, and the power on whom it depends. The farmer above all other men, must feel how helpless he is after all his efforts to secure his own welfare, or insure the safety of his crops. A blast of wind, a tempest, vegetable pestilence, may in one short day lay his hopes prostrate, and defeat his best arranged plans. On the other hand, gratitude for the past and hope for the future, ought to fill every heart, and constitute a motive for increased efforts, and enterprise. Whilst with humility we should recognize the hand of a superintending Providence, we should consider who it is that has given us faculties and powers *for use,* and not for inaction or abuse. That we should both "plough and sow in hope" as if all depended upon ourselves, leaving the event to Him who hath assured us that "while the earth remaineth, seed time and harvest, day and night, summer and winter, shall not cease."

What more can I say, or rather ought I to say. I may have been too bold, if on such a subject, I could be too bold. However, if I have said anything offensive I hope I may be pardoned, because my only motive is the good of my country. WM. EVANS.

Cote St. Paul, May, 1856.

Toronto Horticultural and Agricultural Club.

KITCHEN GARDEN.

The second regular meeting for discussion of this Club was held on Tuesday, 18th March. There was a moderate attendance of gentlemen present; the President, Mr. Allan, and several other leading members being unfortunately absent from unavoidable causes. Mr. James Fleming, one of the Vice-Presidents, occupied the chair. The subject for discussion, "The importance of Kitchen Gardens as an appendage to Farm Houses" was introduced by Mr. Mundie, Landscape Gardener, of this city, whose interesting papers we regret we cannot insert in full. Our space will enable us to give the *practical* directions, only. The introductory remarks on the value and importance of the garden and its products, as well as the concluding arguments by which Mr. M. enforced his theme, were exceedingly well put. Those who may wish to see the entire paper will find it in the *Colonist* of the 22nd March.

A kitchen garden of the present day, may be defined as a piece of land fenced in and set apart for the growth of vegetables, roots, herbs, and small fruits for cooking or kitchen purposes as the name of the garden implies. The term small fruits, comprehends the various sorts of gooseberries, currants, raspberries, strawberries, cranberries, &c.

In choosing a piece of land to lay out a kitchen garden, the situation should not be very flat nor very elevated. In very low situations, the moisture of the atmosphere renders the crops of all sorts more liable to be injured by frost, and on very high land the cutting winds of spring and early summer are also injurious; the blossom and young fruit are often damaged, as also the leaves of tender vegetables and plants of all descriptions, when in a young and growing state.

A piece of moderately light land, sloping very gently towards the South or South-East, avoiding the extremes of situation mentioned above, will under good management give every satisfaction. A point to the East will give increased earliness.

The farmers', or country kitchen garden, (and of which I am more particularly speaking) should be near the dwelling house, and should occupy a position if otherwise applicable, partly between the dwelling and barn or stock yard. If so situated, it will be convenient to manure, convenient for gathering vegetables at all times, and also convenient to cultivate, allowing every half hour to be employed to the best advantage.

The size of the garden should be regulated according to the wants of the family; for a family of six persons, half an acre will not be too much, and for any larger number the ground may be increased in proportion; always bearing in mind, that a small garden requiring to be crowded, is more difficult to keep than a larger space where there is room for proper regulation and rotation.

The shape of the garden may be adapted to existing circumstances, but if otherwise applicable, a quadrangular, or an oblong square can be cropped and cultivated to more advantage than irregular forms, which should only be adopted in case of necessity, either from the land or other difficulties which cannot be controlled.

The fencing is better to be close, to the North side, and partly so on the East and West ends; a shelter of trees outside the garden fence on the North side, North-East, and North-West corners, should be raised as soon as possible. The different kinds of evergreen trees (such as the balsam fir, the Norway spruce, the hemlock spruce, and the different varieties of cedar) will best answer the purpose at least those trees next the fence should be of this kind. They give most shelter at the time when it is most wanted, and their roots and branches are not so troublesome in undermining or overhanging the borders, as deciduous trees, or those trees which throw their leaves every season.

The first step towards the cultivation of the space which may thus have been set apart and fenced for a kitchen garden, is, to drain it thoroughly; some situations and soils there are which may not require the operation, but those are rare exceptions; and as a generale rule, mostly all soils will be benefited by draining. The extent to which this may be necessary, must be determined by the nature of the soil to be operated upon; however, there is no fear of overdoing, as the more drains there are put in, the nearer perfection will the garden be; and on no account should draining be neglected when the garden is laying out, as if once it is planted and furnished, draining cannot be done so well; nor can it be done at all, without undoing and destroying much that may have been already accomplished.

Having selected a point of outlet for the drainage water of some of the lowest corners, and from whence a sufficient fall or run can be got to carry it off; a main drain should then be led along the lowest side, to receive water from the lateral or branch drains, which should be so laid out as to catch or intercept the natural sug or trituration of the water in the land, that is always going on from the higher to the lower levels. The drains should be extended through the border of the shelter trees on the outside of the fence, which being on the North side of the garden will consequently be the highest, and the point from whence the water proceeds.

In most cases the drains will answer every every purpose intended, if dug about three feet in depth; finishing the bottom to a graded slope or run, in the direction to which the land falls. The best materials for permanency are stone, or draining tiles; but no one should be deterred from proceeding because he cannot obtain any one material, as although the materials above mentioned are the most durable, yet good substitutes may be found in either fence rails or brush wood, any of which if well put in and carefully covered with a tough green turf (as all drainage for trituration should be) will drain the land effectually for a period of from forty to fifty years.

The whole garden and tree border outside, should then be subtrenched, to a depth of not less than two feet; preserving fifteen inches in depth of the original surface soil upon the finished surface: the subsoil below this fifteen inches should be dug and loosened to the desired depth, but left in the bottom of the trench (hence the term subtrenching, and fifteen inches of the soil from the surface of the next trench thrown on the top of the loosened subsoil, and so on until the whole is finished.

The benefits of this subtrenching are manifold; it allows the superabundant water to percolate easily and quickly through the soil to the drains, leaving a deeply loosened porous body of soil fully saturated with moisture, but never to stagnate or get sour. It allows a perfectly free circulation of air heat, and other atmospheric influences, to pass into and through the soil, more moisture is retained and held in solution during dry weather; the evaporated moisture from the bottom (which in shallow soils is brought to the surface and absorbed into the atmosphere) being absorbed and retained by the depth of soil, in its passage upward, a small surplus only passing off by slow degrees into the atmosphere.

The roots of all plants and vegetables penetrate this loose soil to such a depth, as that even during long continuances of dry weather, they are seldom or never what we would call burnt or scorched; and having a greater range of pasture, they are much increased in size and value. But this is not all, their properties are also quite different; as from being produced upon a soil perfectly drained and ventilated (so to speak) and which allows all the organic elements free scope to play a part in their growth and maturity, we may be well assured that they are superior to the productions of an undrained, untrenched, sour soil, as a man who feeds upon good, wholesome, well prepared food, and lodges in a well drained, well ventilated house, taking sufficient exercise, is superior to a man who lives upon inert matter, and lodges in an ill drained, ill ventilated house, taking little or no exercise. (The cultivation of the surface represents exercise.)

When the trenching is finished and the surface brought to a graded level, the walks should next be marked out. Cross walks may be put to to divide into convenient sized quarters, but one main walk all round the garden, at about from nine to twelve feet from the fence inside is essentially necessary, because the borders next the fence being on some sides the warmest, and on others the shadiest, should be occupied with all kinds of small early and late crops, to cultivate and to gather which, it is necessary to have ready access at all times from a main walk.

Gooseberies, currants,and raspberries, with probably a dwarf pear in each corner (to break the sameness which would otherwise prevail) should occupy a border of about five feet wide, round each quarter, the bushes to be set in one line, about six feet apart, along the centre of this border; the black currant and gooseberry in the shadiest places. Raspberries should have a situation open to the sun most part of the day, as otherwise the wood will be winter killed. They may be planted three feet apart in line. Strawberries will do best in one of the open quarters, they should be renewed by re-planting every second or third year, and always on a fresh quarter. Rhubarb and asparagus may be advantageously planted in two exposures, the one in the sun, and the other in the shade; by attending to this, the season of these most excellent vegetables will be prolonged. The ground for those should be made very rich with old and well rotted manure; to be right, the manure and soil should be half and half.

I would not recommend planting flowers along the fruit borders, as they draw off the nourishment from and deteriorate the quality of the fruit, at the same time, from their tendency to nourish weeds and to harbour the seeds of weeds, they are the cause of the bushes and edgings being so over-run, as perhaps from a temporary neglect, to get beyond all possibility of ever being cleaned. The walks of a garden of half an acre should be about four feet six inches wide, and so in proportion to larger gardens. The soil from the walks to the depth of from six to eight inches should be thrown upon the borders and quarters of the garden and the space so excavated, filled in with broken stone and gravel on the top, or with the best hard material for making walks, which may be within the reach and means of the owner.

Good cultivation includes not only the entire extirpation of all weeds as soon as they appear, but also, (and more especially in dry weather,) frequent stirrings of the whole of the surface of the ground, in the borders, and among the various crops as they advance in growth. If this be attended to, it will act largely as a preventive of weeds germinating, and also open the surface of the soil, encouraging the circulation of the air, as before spoken of, to proceed more freely, which is of essential benefit to all growing crops.

In some measure corresponding to these preliminary remarks, there must be an amount of preparatory labour before a kitchen garden can be expected to be either satisfactory or productive, and to any one not acquainted with the operations thus described, especially if they view the whole of the various improvements at once, garden making on this standard will appear to be a formidable business: but by directing the attention to each part of the work separately, and prosecuting that at all convenient times until

finished in the best manner, and so on in succession proceeding systematically, I do not hesitate to say, (and that even to a farmer whose hands are sometimes pretty full,) that the work may be accomplished, without much inconvenience, and all the more easily from knowing, that by doing it in this thorough manner successful results are certain.

From a good kitchen garden attached to a farmer's or other country house, and having been prepared as above stated, the owner with his family may enjoy a large portion of either fruit or vegetable diet every day in the year; but that can only be accomplished by carefully attending to the sowing and planting, cultivating and gathering, storing and preserving, all the various productions at their proper times and seasons; yet, when this is gone about systematically (proper conveniences being provided) it will rather result in being, in a great measure, a pleasure than a toil.

As early as the end of April or at furthest in May, asparagus, rhubarb, winter spinach, lettuce, radishes, and top onions, may be gathered in profusion. When at the same time, from the former years stores may be supplied, turnips, carrots, beets, onions, parsnips, kidney beans, and cabbages, if they had been preserved in pits, with dried parsley and all the varieties of seasoning herbs such as mint, sage, hyssop, marjoram thyme, savory, &c.; and also preserved fruits and celery, with the various species of squash, and gourds will have been in use.

I have mentioned the months of April and May, because most people know that in those two months vegetables are scarcer than during any other period of the year; yet during those two months we have here a very good variety, all plain to be sure, but very valuable as an addition to a family diet: and I have taken particular care not to put down anything but what is quite easy and practicable to have at the season spoken of.

The saving effected from the addition of a plentiful supply of roots and vegetables to a family diet, will at the year's end be a very large item; as by that means, more of the products of the dairy and poultry yard, with flour and flesh meat of all kinds may be marketed; but the saving in point of economy is only a small portion of the benefit resulting from a proper mixture of vegetables with the aliment of a family.

The numerous varieties offered for sale by gardeners and seedsmen, sometimes perplex the purchaser, and it often happens that the best are not chosen. The committee appointed to make the following list was composed of gentlemen well qualified for the purpose. Their names are Professors Croft and Buckland, and Messrs. Fleming, Mundie, Leslie and Gordon, practical gardeners:—

REPORT.

The Committee appointed at the meeting of the Club, to make out a list of the most useful and best kinds of vegetable seeds, roots, and small fruits, (with their proper names), to be appended to Mr. Mundie's paper, have recommended the following varieties as being the most suitable for the purpose. They are all of the best kinds that are now in cultivation for general crops (taking their qualities and productiveness into account.)

They are placed in the order of their earliness, and also of their merit, and can be obtained from any regular seedsman or nurseryman by the names given in this list.

Vegetables.

Name.	Sort.
Asparagus—	Giant.
Kidney Bean—	Yellow Six Weeks.
"	Red Specked.
"	Scarlet Runners.
Beet Root—	Early Turnip rooted.
"	Long Blood.
Cauliflower—	Early London.
"	Late French.
Carrot—	Early Horn.
"	Red Altringham.
"	Long Orange.
Cabbage (*summer*)—	Early York (small.)
" "	Endfield Market.
" (*autumn*)—	Shilling's Queen.
" "	Large York.
" (*winter*)—	Quintal.
" "	Flat Dutch.
" "	Savoy Dwarf Curled.
" "	Red Dutch (pickling.)
Celery—	Red Solid.
"	White Solid.
Cucumber—	Short Green.
"	Long Green.
Lettuce—	Maltese.
"	Victoria Cabbage.
Musk Melon—	Scarlet Flesh Cantelupe.
"	Green " Nutmeg.
Water Melon—	Long Island.
Onion—	Large Yellow.
" "	Red.
Capsicums—	Large Yellow.
Parsley—	Double Curled.
Parsnip—	Dutch Hollow Crowned.
Peas—	Early Kent.
"	Blue Imperial.
"	White Marrowfat.
Radishes—	Scarlet Short Top.
"	Long Salmon.
"	Red Turnip Rooted.
"	White " "
"	Black Spanish (for winter,)
Rhubarb—	Myatt's Victoria.
" "	Albert.
Squash—	Scolloped Bush Squash.
"	Boston Summer.
Potatoes—	Early June.
"	Gold Finder.
"	Shaw's Seedling.
Spinach—	Round Leafed.
"	Prickly Seeded.
Tomato—	Large Red.
Turnip—	Early White Stone.
"	Golden Ball.
Herbs—	Sage.
"	Thyme.
"	Summer Savory.
"	Sweet Basil.
"	Sweet Majoram.

SMALL FRUITS.

Currants—	Black English.
"	" Naples.
"	Red Dutch.
"	" Grape.
"	" Victoria.
"	White Grape.
Raspberries—	Red Fastolf.
"	" Antwerp.
"	Yellow "
Gooseberries—	Red Ashton.
"	" Warrington.
"	" Ironmonger.
"	" Crown Bob.
"	White Whitesmith.
"	" Eagle.
"	" Caroline.
"	Yellow Golden Drop.
"	" Lyon.
"	Green Ocean.
"	" Langleys.
"	" Gascoigne.
"	" Willow.
"	" Laurel.
Strawberries—	Early Scarlet.
"	Scotch Pine.
"	Hovey's Seedling.
"	Boston Pine.
Grape Vine—	Isabella (black.)
"	Sweet Water (white.)

NOTE.—Asparagus and Rhubarb, when it is possible, should be purchased in roots; seeds may be used when roots cannot be had, only it should be borne in mind, that as regards rhubarb, seeds will seldom produce the same variety from which they were taken, the plants so raised being almost always a hybrid sort, and that by using two year old asparagus plants, just so much time will be gained, unless where there may be the convenience of a hot-bed or frame. It will generally be found best to purchase celery in plants instead of seeds.

Round Spinach for summer may be sown as soon as possible in Spring; one or two successive crops may be sown at from three to four weeks intervals afterwards.

Prickly Spinach, to stand the winter, should be sown about the middle or during the latter half of September. It will come into use with the first growth in Spring, and will last until the spring sowing comes in.

Peas should be sown at different times, to produce a succession of crops, say the first early sort as soon as the frost breaks up in spring, the second sort about three weeks later, and the third sort from three to four weeks later still; always proportioning the quantities to the probable wants of the family during the time that each sort may be in season.

In dry weather, such seeds as peas, beans, radishes, turnips, carrots, parsnips, &c., should be soaked in soft water from 12 to 20

hours before being sown; this will ensure their coming up. In the case of turnips a good plan is to soak half the seed and sow mixed with the other half unsoaked. This will give two distinct braids, and consequently two chances against the fly. The seed must not be kept over after having been soaked.

——:o:——

The Agriculture of the French Exhibition. By John Wilson, F. R. S. E., F. G. S., &c., Professor of Agriculture in the University of Edinburgh. Edinburgh: Adam & Charles Black. 1856.

From the Canadian Journal.

The work which stands at the head of this article was prepared in the form of a lecture, and delivered by the author to his Agricultural class in the University of Edinburgh. Professor Wilson is favorably known on this side of the Atlantic. He was appointed one of the British Commissioners to the New York Industrial Exhibition in 1852, when he attended the Provincial Shows of both sections of this Province. Canada is under great obligations to him for the interest he took in our department of the London Exhibition, in 1851, and the favourable disposition he has subsequently shown towards Canadian productions, both in the Paris Exhibition, and with reference to their introduction to the Crystal Palace at Sydenham. The British department of Agriculture in the Paris Exposition was entrusted to his care, and he was also appointed a Juror in the general examination and adjudication of awards, We need scarcely say, therefore, that Professor Wilson must be highly qualified, from previous acquirements and professional duties, to speak and write on the Agriculture of the French Exhibition. We proceed to lay before our readers a few facts and statements relating to this department, gleaned principally from his lecture.

The Agriculture of France continues as yet very defective in reference to two of its most important departments, *draining*, and the use of *special manures*. The former, Professor Wilson says, is daily becoming more appreciated, and some few plans of drainage were exhibited, with a comparative statement of results. A French writer on agriculture, who has already established a European reputation, Leonce de Lavergne, observes in a recent number of the *Revue des Deux Mondes*: "That with badly worked and badly manured fields as is still the case with three fourths of France, drainage can produce but little good effect. Great progress has to be made in most districts before that. The adoption of a good rotation costs less, and may prove as productive. Then comes the employment of some improved implements, as a good plough, a good harrow, threshing by machinery, and the use of improvers for the soil."

Guano till quite recently has been but very sparingly used in France. During the first six months of 1854, out of 225,000 tons exported from the Chincha Islands, 113,000 went to England, 98,000 to the United States, and only 5688 to France. In 1855, however, France imported 100,000 tons of this valuable fertiliser. Considerable attention seems lately to have been given in that country to the manufacture of artificial manures, several of which were exhibited. "Of these," the Professors remarks "one, the Fish Guano—

"Particularly claimed attention, inasmuch as the practicability of the manufacture was lately the subject of much discussion in scientific as well as in commercial circles. It was manufactured, I was informed, upon a considerable scale, the process differing somewhat from that suggested in this country. The fish, either the refuse of the market or otherwise, is cut into pieces, and submitted to the action of high pressure steam (four or five atmospheres) in suitable vessels, for about an hour. It is by that time sufficiently cooked, and is then ready for the presses, which expel a great proportion of the water, and leave the residue in the form of a cake. This cake is, by means of a coarse rasp or grating machine, broken up into a sort of pulp, which is spread out in thin layers on canvass, and dried by means of warm currents of air. It is sold either in this state or more minutely divided by means of the ordinary grinding processes. It is stated in this condition to correspond to 22 per cent. of the crude weight of the fish, and to contain from 10 to 12 per cent. of nitrogen, and from 16 to 22 per cent. of phosphate. The price was 20 francs per 100 kilogrammes (about £8 per ton), and the demand regularly increasing. Probably there are few places where this manufacture could be carried out more advantageously than along the north-east coast of this country, where both the raw materials,—fish and fuel,—are so abundantly provided; and I certainly think the simple process of the "*Engrais Poisson*" is more economical than and preferable to the processes hitherto recommended."

In the agricultural implement department there was an extensive display, but nothing particularly novel or superior to what had been previously exhibited elsewhere. There were no less than 350 exhibitors, whose productions as might be expected indicated very different orders of merit.

"The practical trials of the implements were of a somewhat irregular and protracted character. Those coming immediately under the adjudication of the Agricultural Jury were carried out satisfactorily, considering the difficulties attendant upon the operations of such a large number of machines and implements, most differing from, and many of them entirely new to the agriculture of the land. The trials occasioned considerable excitement,—each time the country sent its representatives from far and near. Ministers of State and Imperial Commissioners, with their President, the Prince Napoleon, Arab chiefs, and foreigners from all parts of the globe, came to see the experiments; while the presence of a battalion and a brigade, with their martial accompaniments, conferred a *novelty*, if not a charm, upon the field. After all, these warlike accompaniments formed a striking background for such a living picture of the peaceful arts. The results of all these comparative trials will be officially made known by the Jury. The character of the English implements was well sustained, in none perhaps more than in the *ploughing* trials, when the dynamometer showed, that while it required only a force equal to 17.01, to turn over a *certain quantity* of earth in a *certain time*, with the best English plough, it required a force of more than 27 to do the same work with the *best* French one, and 32.3 with the best Belgian plough. Many other ploughs were tested, some requiring a force of 60, 80, and indeed nearly 100, so that practically one horse with the English plough would be as efficient as *four* or *five* horses attached to some of the other ploughs. In the trials of Reaping Machines, the Americans were each time victorious; the work was admirably done. An English and a Canadian machine, on *Bell's* principle, were forced to withdraw from some derangement of the working gear. These machines, from their economy of labor, and rapidity and excellence of work, appeared to produce a great effect upon the crowds who witnessed their operations. I fear, however, that the agriculture of France is not sufficiently advanced for their successful introduction. What Palladius said of old, is equally true now,—that they are only to be used when the fields are large, and the surface level,—and these are certainly not the present conditions of France."

"Of all implements," says M. de Lavergne, "the most necessary is the most difficult to perfect; there is not such a thing as a *perfect* plough, and it is very doubtful if it be possible to find one which shall satisfy every condition. All the ploughs were tried by the jury; those which did apparently the best with the least draught were, the English *Howard*, the American [Canadian] *Bingham*, the Belgian *Odeurs*, and the French *Frignon*. As the experiment shewed no very marked superiority in any, it is probable that each nation will keep to its own. That which is defective and imperfect in the work of the plough has to be supplied by other implements; as scarifiers, diggers, harrows and rollers. For these the superiority of the English is incontestable. Nothing can match Garrett's *cineuse*, Colman's weeder, and the Norwegian harrow and clod crusher of Crosskill. These superior implements are now copied in France, as far as the high price of iron and the means of our cultivators admits."

In the trial of implements we understand that *Morse's plough*, manufactured at Milton in Upper Canada, stood next to Howard's

in lightness of draught and quality of work, then came Bingham's, an iron plough, the irons of which were not polished like Morse's —a circumstance that will, to some extent at least, account for the small difference of draught on a first trial. These two ploughs were purchased with many other articles by the Canadian Government, and transmitted to the French Exhibition. It is no small honor for the daughter to be but slightly excelled by the mother, in that most ancient, important and characteristic implement, the plough.

In the fourth section, relating to the produce of cultivated crops, the first and foremost place is assigned to the French Colony of Algeria, which, after being for many years dependent for a considerable portion of its food and a drag on the mother country, has been changed by the adoption of an improved system of tillage, into a large exporter of the necessaries and of some of the luxuries of life. But Algeria is not without her rivals. Professor Wilson remarks:

"Rivalling the fine samples of hard wheat from Algeria, were the *white wheats* of Australia, Tasmania, the Cape, Canada, and Sweden. France, Spain and Belgium also exhibited beautiful wheats, both white and red; while the *red* wheats of Portugal were very highly commended. Austria and Baden both furnished very comprehensive and well arranged collections of agricultural produce, and the *quality* of the wheat exhibited by Turkey shewed the richness of her soil, while the dirty unmarketable condition testified to the want of care of its inhabitants. Denmark, Sweden, Canada, and Hungary exhibited the finest samples of *barleys*; and Tasmania sent a sample of *oats* equal to any in the building. The specimens of *maize* were very numerous and of admirable quality; the finest perhaps were from Algeria, Canada, Australia, Portugal, Hungary, and Styria. *Rye* and *buckwheat*, two crops hardly known as bread corn in this country, were contributed by France, Bohemia, Denmark, Sweden, and Canada, in which countries they are very largely consumed. Samples of *rice* were contributed by South Carolina, of remarkable size and color; Algiers, Portugal, Tuscany, and the Pontifical States also exhibited their produce. Bavaria, Bohemia, and Belgium sent fine collections of *hops* of superior quality. Canada also exhibited samples showing a marked improvement in quality since 1851. The advanced state of the *flax* cultivation in France, Holland, Belgium, and Austria, was well represented; from each country an extensive series of samples of various qualities, and in the different stages of preparation was sent. The *tobacco* specimens, I was informed, were of extraordinary quality, in many cases, I am sorry to say, superior to the samples of grain of the exhibiting country. Those most commended were contributed by Algeria, France, Austria, Baden, Spain, and Portugal. From Greece a small collection of grain was sent, as also a pot of honey from Mount Hymettus, which the umpires, still faithful to the traditions of the poets, pronounced to be the best in the Exhibition."

British agricultural produce was confined to one collection, exhibited by the British Government, and entrusted to the care of Professor Wilson, who manifested no ordinary amount of taste and skill in procuring and arranging the several articles, which excited much praise and admiration, both from the visitors and the press. The official Hand-book has the following remarks:

"Vegetable productions occupied a large space in the contributions from the English Colonies. Their prodigious variety, their relations with manufacturing industry, and with the *alimentation* of the country, assigned to them naturally a prominent position in the Exposition of 1855. But we were not prepared to see the agricultural produce of England represented with such éclat. Whilst the contributions from the Indies struck us by their variety, which, so to say, prevented all methodical classification; those from England were arranged in admirable order, and thus enabled us to appreciate at a single glance the results of that high cultivation which the necessity for a large production has forced upon this great nation. The cereals, leguminous and forage plants, and the indigenous timber woods, were represented by specimens in their natural state; the roots and cultivated fruits were represented by wax models; the domesticated animals by carefully painted portraits. This collection, in its ensemble, does the greatest honor to those who made it; our only regret is that the place assigned to it in the Annexe was somewhat removed from the great lines of circulation."

The spirit of the author's concluding observations will find a ready response among the true hearted of our race, not only in Canada, but in every civilised nation of the earth:

"This brief sketch which I have given you has touched but the surface—the salient points of interest which naturally present themselves to the ordinary observer. But a man cannot long remain an *ordinary* observer whose duties lead him, day by day, and week by week, to the examination of these great and varied evidences of Divine beneficence. He cannot compare unmoved the productive ratio of skilled and Christian Europe with that of the dark, unevangelized nations of the East. He cannot but trace the hand of Providence in adapting the wants and produce of a country to each other,—whether he seeks for it in the contributions from the ice-bound shores of Scandinavia or the sunny lands of southern latitudes. He feels, after all, how poor are man's efforts, and how small is his success, when—with all the powers of advanced civilization, the matured intellect, and the developed skill—he cannot rival the beauty and the richness of those productions which Nature has bestowed on lands over which her sway is still undisturbed. His intellect may originate,—his skill may apply,—science and art may lend means for the adaptation of Nature's gifts to his daily need, but his own *finiteness* must ever come home to his mind with the great truth that—though as *Paul* he may plant, and as *Apollos* may water,—it is *God* that giveth the increase."

We too, in Canada, have many great and wise lessons to learn from the part we have played in these palaces of Industry reared successively in the two chief capitals of Europe and of the world. We have much to be justly proud of in the appearance we have made; but our experience will have been to little purpose, if we do not also learn from it how much we have yet to accomplish in every way, to place us on an intellectual as well as an industrial equality with these, the foremost among the nations of the world.

G. B.

——:o:——

TRIAL OF PLOUGHS.—The Trial of Ploughs spoken of in this Journal, came off on the 29th April, near York Mills. There was a good attendance of farmers, as well as several distinguished persons from a distance. Five Ploughs were tested with the dynamometer, viz., Moreland's, Bingham's, Howard's (English), No. 2 Lap Furrow (American), and the Iron Scotch Plough. The following gentlemen were named a Committee to report on the trial: D. Christie, M.PP., John Wade, Esq.; Col, Thompson; and J. C. Aikens, M.PP.

We have not space in this Number for the Report of the Committee, but we give below the result of the trial as indicated by the instrument:—

	DRAUGHT.		FURROW SLICE. *depth.*	*width.*
	cwt.	lbs.	in.	in.
Moreland	3	108	6	8¾
Bingham	3	96	6	9
Scotch	4	32	5⅝	8¼
Howard	4	32	5	8½
Lap Furrow	4	28	5	10

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MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

30*th May*, 1856.

Hay from 7 to $9 per 100 bundles.
Straw from 2 to $3 do.
Fresh Butter, per lb. from 1s 2d to 1s 3d.
Salt Butter, do from 10d to 11d.
Country Cheese, from 6d to 8d.
Wheat, 6s to 7s.
Barley, 4s to 4s 6d.
Rye, none.
Oats, from 1s 3d to 1s 6d.
Yellow Indian Corn, from 3s 6d to 4s.
Indian Corn, (Ohio) 2s 9d to 3s.
Buckwheat, from 2s 9d to 3s.
Timothy, 15s.
Peas, from 3s 3d to 3s 6d.
Beef, per 100 lbs, from $6 to 8.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 8d.
Veal, 7d to 7½d.
Eggs, 7d to 7½d.

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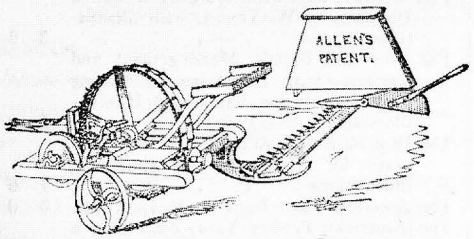

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1856.

THE COUNTY OF MONTREAL

Agricultural Society,

OFFERS the following Premiums for the following Crops:

ENGLISH CLASS.

		Shillings.				
Potatoes, 6 Prems.	50	45	40	35	30	25
Carrots, 5 do.		40	35	30	25	20
Mangol Wurtzel, 5 do.		40	35	30	25	20
Turnips, 3 do.				30	25	20
Indian Corn, 6 do.	40	35	30	25	20	15
Horse Beans, 3 do.				30	25	20
Summer Fallow, 2 do.					30	20

For General Competition.

The Best Surface Drained Farm, 2 premiums, . . .					30	20

RULES AND REGULATIONS.

A Field of Four Arpents, at least, will be required to entitle a Farmer in this Class to compete for Potatoes and Summer Fallow.

One arpent for Indian Corn.

One arpent for Beans.

Half an arpent for Turnips, Carrots, Mangol Wurtzel, the whole to be Field Culture.

No person allowed to compete unless a Member of the Society.

No Premium to be given unless Farm is free from noxious weeds.

The parties to whom First Premiums are awarded, shall report to the Society, the system adopted in the production of the crops.

That such Premiums shall be paid only upon Interrogatories being answered, and Circulars returned filled up, addressed to the Secretary-Treasurer.

This Rule will be enforced strictly.

Notice of Competition to be give to the Secretary-Treasurer on or before the 20th July next.

By Order,

JAMES SMITH, Sec.-Treas.

Montreal, 1st May, 1856.

Lower Canada Agricultural Implement Warehouse

AND

SEED STORE,

St. Ann's Hall, over the St. Ann's Market.

THE SUBSCRIBER has just received from FRANCE, a considerable quantity of FIELD, GARDEN and FLOWER SEEDS, amongst which will be found several kinds of CLOVER and other SEEDS never before introduced into this country. He has also on hand every variety of SEED GRAIN, all of which will be found pure and unmixed.

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G. G. Gaucher,	"	Ste. Genevieve.
Frs. Quesneville,	"	St. Laurent.
Joseph Laporte,	"	Pointe-aux-Trembles.

P. L. LE TOURNEUX,

Secretary and Treasurer.

Montreal, 1st July, 1854.

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S. GERRARD, *President.*
J. FROTHINGHAM, *V. P.*
J. T. BARRET.

Montreal, March 29th, 1856.

The Savings Bank Department

OF THE

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By Order.

D. DAVIDSON,
Cashier.

Montreal, 30st March, 1856.

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May 29, 1856. 2 p

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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 3, Montreal, July, 1856. POSTAGE FREE. Price 2s 6d per annm, in advance.

The Farmer's Journal.

Dear Labour and Cheap Land versus Improved Farming.

We think we have a right to congratulate the farmers of Lower Canada, on the favourable weather which has enabled them to commit to the soil in good order the seed to which, under God's blessing, we trust for an abundant harvest. Long and severe though our winters are, when they are followed by springs like that just past, we have less cause than many persons suppose, to envy the mild but moist winters of western Europe.

Yet, in looking back on the hurried work of seed-time, every farmer must feel that he has left undone much that he could have wished to do, and that much has been done too hastily and imperfectly. He has been tempted by want of time and the dearness of labour to withhold from his land much that he knew would promote its productiveness, even at the risk of causing it in future years to become less remunerative to the labour bestowed on it. This whole question of dear labour and scanty time for cultivation, in connection with the undue advantage which these difficulties induce the farmer to take of the cheaper element of productiveness, his naturally fertile soil, merits careful study, especially at this season, when recent experience must forcibly impress us with the magnitude of the evil. We have chosen this subject now, not that we hope by anything we can write to relieve the farmer from this disadvantage ; but with the design of inviting him to view it with the thoughtful consideration and determined resolution, which are required for its mitigation or removal.

The circumstances of Canada, render it impossible that agricultural labour can become very cheap ; for not only do the facilities for expansion prevent the population from becoming dense, but the labourer must obtain high wages in summer to enable him to subsist during the winter, or which amounts to the same thing, the farmer must support him during the season when his labour is comparatively unproductive. On the other hand, land is cheap, and the burdens on it light, and while this in so far compensates for the scarcity of labour, it also tends to increase this scarcity by giving to the better class of labouring men opportunities to become independent farmers.

The Canadian farmer must therefore be prepared to study the best means of obtaining the largest possible produce per acre, with the least possible amount of labour. This he may do, at least for a time, in either of two ways. He may exhaust his soil by cropping as long as it will afford crops with little labour and manure, or he must avail himself of all the modern arts and appliances for saving labour, in order that he may effect this saving without impoverishing his land. It is natural, perhaps inevitable, that the early settlers in a new country should resort to the first of these methods. It is necessary that their successors should devote themselves earnestly to the study of the second, otherwise our agriculture must descend from wheat to rye and buckwheat, and from good to bad crops of these, as we may already see in some settlements. Some persons maintain that this last result cannot be averted, inasmuch as high farming or that which is remunerative to the soil, will not remunerate the farmer ; and others are endeavouring to devise for this country, schemes of cropping less costly than the regular rotations of the old countries, yet not likely to impoverish the soil.

Let us look at the two extremes of practice. Let us suppose a farmer located on fertile soil, to confine his attention almost entirely to grain crops, to keep little stock, to sell or burn his straw, to allow his barn yard manures to go to waste, and to introduce no other manures. So long as his land remains fertile, he obtains valuable crops at small expense, and the only drawback is that, as all experience as well as theory must testify, he ultimately impoverishes his land, his crops diminish, and he must emigrate, or adopt a new mode of culture. This is in short bad farming, but it must not be forgotten that, to some extent, this kind of farming must be pursued by poor settlers in a new country.

Our other extreme brings before us the processes by which soils treated after the fashion just described, must be renovated. Our farmer now drains and ploughs up the subsoil, thus bringing into use new portions of soil, he applies mineral manures and guano, he makes composts, ploughs in green crops, scrupulously saves and applies all the solid and liquid manure of the farm, cultivates root crops on a large scale, and feeds good varieties of stock. On such a system he

requires more labour, but he will obtain, even from a less fertile soil, a greater return than on the other method, and he will leave his land better than he found it.

The grand question is, will good farming pay in this land of dear labour; and it must be confessed that large sums have been expended in high farming without return; that almost every advance in scientific agriculture, requires increased labour and attention, and that the rewards of this are often less immediate, than the returns of the first wasteful cultivation of virgin soil. On the other hand we should consider that there has been and is, much *expensive* farming which is by no means scientific, and that many large farmers have in their anxiety to realise large money returns for their capital, pursued methods just as wasteful, and as rapidly tending to poverty, as those of the poorest small farmers. Making these deductions, and taking together the case of the prudent and scientific large farmer, and of the industrious and skilful small farmer, we think the experience of all observant men in British America, must decide that the probabilities of ultimate success are in favor of improved agriculture, based on the principles which now regulate the practice of Great Britain.

We design to illustrate the truth of this by directing attention, first to improvements that directly save time and labour, secondly to those that make large demands on the means and labour of the farm, and thirdly, the substitutes for these more laborious methods, that may be usefully adopted here. We must, however, reserve these thoughts for another article.

———:o:———

TEST FOR GUANO.—Good guano owes its virtue as a manure, first, to the presence of ammoniacal salts, and, secondly, to that of the phosphate of lime, or bone earth, derived from the bones of fish. To test for the ammonia, take a spoonful of guano, and a spoonful of powdered quicklime, put them in a mortar, and rub them with the pestle for a few seconds. If the guano be genuine, the smell will resemble that of a bottle of salts, and will make the eyes water in the same manner. In this way it may be proved whether the sample be guano or not; and also the strength of different samples may be estimated by the comparative strength or effluvium of the ammonia disengaged. To test the phosphate of lime, place a small quantity (say 100 grains) in an iron ladle, or earthen pipkin, or any similar vessel, in which heat it red hot, over a clear fire, for twenty minutes. If the guano be genuine, it will be reduced to a white ash, weighing about 35 grains. If the 100 grains, when burned, weigh much more than 35, the guano is not genuine, or contains an undue proportion of sand, or similar matter.—*Irish Farmer's Gazette.*

CLEAN FARM.—Mr. A. ROGERS writes to the *Ohio Farmer*, that it is less expense keeping a farm in nice order, than shabby and ragged, and adds:—"If any person will get elderberries enough on my farm of 93 acres, for one pie, I will give him five dollars, and the same for a gill of thistles, burdock or mullen." That is the right way to farm.—*Country Gentleman.*

———:o:———

CORN FOR GREEN MANURE.

MESSRS. EDITORS—I wish to make the inquiry of you, of the relative value of sowed corn plowed under as a manure. Would it not be worth more than clover or buckwheat? We know we can raise ten times the amount in bulk by sowing the large western corn, that we can of clover or buckwheat. By rolling it down, it can be covered nicely with a good plow. I plowed under an acre last year, just by way of experiment. But I thought it would be safer to be enlightened a little on the subject, than to be groping in the dark. Please to give me your opinion in reference to its *value, compared* with other green crops, and in what state of the corn it would be best to plow it under.—OTSEGO.

Analysis shows clover to be the most valuable green crop for manure, according to its weight, and experiment confirms its value. The same weight of corn-stalks would not probably yield more than half the amount of fertility. We should discard buckwheat, except as a weed-smotherer, while corn and clover could be had. We have never found so great a disproportion in the *quantity* of corn and clover, as our correspondent states, the corn stalks never exceeding the weight of clover more than three times, on soil of equal fertility. The large sorts of corn, (which however will not grow so thick as small,) may increase the difference.

If cut too green, the stalks will not have sufficiently developed their fertilizing qualities; and if too ripe, they will not decay soon enough. The best time is when the edges of the leaves begin to dry, or about the time that the ears begin to be glaze.

We want measured experiments to determine the relative value of these crops for manure—will not our correspondent undertake a series for this purpose.

———:o:———

GUANO FOR GRASS LANDS.—We have recently conversed with two gentlemen—both practical men and of critical observation—who informed us that they have now fields of grass, and yielding good crops, laid down some five, six and seven years ago, manuring them solely with guano, and receiving little or no manuring since. If such were to be the general result, we might bring up our farms to a wonderful degree of fertility, because a third or a half of the tillage land laid to grass with guano, and producing a full crop for several years in succession, would enable us to appropriate all the manure of the farm to the hoed crops. This would allow of very high manuring, and put the land in such condition as to produce heavy grass crops without the further application of guano. But we need further experiments, and to test the guano upon its own merits, by putting the land into grass without a particle of any other manure.—*N. E. Farmer.*

Guano applied as above, has always been found to yield a good profit; and if *vegetable* matter be added with it in occasional dressings of bog mud or weed compost, no fear need be entertained of running out the land. Where farms have been run out by constant neglect of the animal manures, guano and vegetable matter are precisely what they want to restore fertility. Vegetable mould can be restored by composts or by ploughing in clover, &c. Guano must be purchased, unless a sufficiency of urine, which chemically is nearly the same with guano, can be procured.

———:o:———

The Paris Agricultural Exhibition of 1856.

The international Agricultural Exhibition which is being held in the Palais d'Industrie, Paris, surpasses in importance any previous agricultural meeting, not only in the numbers and in the varieties of the principal breeds of cattle, sheep, pigs, poultry, &c., and in the products of the soil, but in the agricultural implements and machinery in general use in Europe. The influence which this Exhibition is calculated to exercise upon the advancement of agriculture generally, it is impossible to estimate. The enlightened policy which dictated in 1855 an international agricultural show, was not responded to in a manner at all commensurate with the pecuniary and honorary inducements held out by the French and Imperial Commission. A repetition of the agricultural programme of 1855, and the extension of the premium list so as to embrace breeds of cattle and sheep not previously recognised, has been generally met in a friendly spirit, and a feeling of generous rivalry has been produced in various districts and countries to present to European inspection the various breeds of domesticated animals peculiar to each district or country. The advantages presented to agriculturists as a body by this international gathering, must contribute powerfully to elevate the profession of agriculture. Hitherto the chief difficulty in the way of intercourse between husbandmen of different countries has been the absence of a common ground upon which to meet. Hence the difficulties connected with the ascertaining of what each could learn from others. These wants have been foreseen, and are now being provided for by the liberality, foresight, and generous conduct of the French Government. Agriculturists, by their open intercourse, will not only become more enlightened, but a healnty spirit of innovation will be spread over Europe, resulting in a fuller development of the inexhaustible fertility of the soil, tending to elevate the standard of food, and, consequently, to produce a more vigorous and happy population. Such an effect would tend to place in its proper position the art of agriculture; which, in the language of Washington, is

"not only the most healthy, the most useful, but the most noble employment of man."

The Palais de l'Industrie is unlike the erection of 1851 in Hyde Park; a substantial building of stone, with a roof of glass. Last season this magnificent building with several *annexes*, was occupied with the display of the various raw and manufactured products of the world's industry. All this display has been removed, and in the same place, with the aid of new *annexes*, are placed for exhibition various European breeds of cattle, sheep, pigs, poultry, agricultural implements, and machinery, with the cultivated products of the field, the orchard, and the garden. There also arranged the products of the various French colonies—Algeria taking the first place in extent and in variety. Specimens of wheat, barley, pease, &c., in the straw, the growth of this season, are present; and the grain and flax seed are seen fully matured.

The north gallery, which was formerly occupied with the manufactured products of Egypt, Tunis, Turkey, Greece, &c., is now arranged *à l'armée d'Orient*. This will, to the French visitors, if not to strangers, afford much to please and gratify national feeling.

Maps of farms, domains, &c., with models, of farm buildings, mansion-houses, and other objects more directly connected with agriculture, are brought together to gratify and interest visitors. To many, this Exhibition will prove a source of greater attraction, and of more abiding utility than the varied and gorgeous display which, in the previous season, filled the Palace.

In the fitting-up and the arrangement of the whole interior of the Palace, with the numerous *annexes*, very considerable judgment is displayed, and everywhere that exquisite taste for which the French are so distinguished. The nave of the Palace is laid out as an ornamental flower-garden. In the centre is a fountain; at equal distances on both sides of this are *jets d'eau* throwing water to a considerable height. Several pieces of sculpture are arranged over the grounds, through which wind walks covered with yellow gravel, contrasting finely with the green turf of the plots. In these plots are placed trees, principally pines, some of which are nearly oune hundred feet in height; orange, olive, and other trees, with those of a tropical climate, such as various palms, groups of rhododendrons, azaleas, roses, and other flowering shrubs, single or combined. Flowers which are now in blossom in the open air, or from conservatories, add their graces to the grouping. The whole is surrounded by a broad roadway. This garden is of itself an object of such attraction as will well repay the charge of entry to the building—one franc.

From the front of the galleries are suspended wreaths of flowers, banners, and shields. On the latter are the names of the various breeds of cattle exhibited. Attached to the iron pillars which support the galleries, are the names of the counties or districts of which the stocks are habitants. The stalls for the cattle run at right angles to the roadway surrounding the garden. For each animal there is a convenient and neatly-fitted stall, similar to those in the best-constructed stables. The flooring is made of asphalte, and behind the cattle is a broad walk for visitors standing or passing along. The cattle are arranged according to breeds, sexes, and ages. As the building could not conveniently accommodate the whole of the cattle entered, a portion is placed in a yard annexed to the end of the Palace. Behind the Palace are canvas erections for accommodating the sheep, pigs, goats, poultry, machinery, etc. The arrangements here are equally tasteful, convenient, and commodious with those of the interior. The whole of the ground, which was previously occupied as gardens, etc., is now filled with stock or implements, stacks of forage, and other essentials necessary to maintain for everal days such a large head of stock.

The two side galleries of the Palace are devoted to machinery, specimens of grain, seeds, and roots. In one of the end galleries is displayed numerous articles from the Crimea; the other is fitted up as the *salle* for the distribution of the medals.

The accommodation for those in charge of the stock is ample; the Government not only furnishing substantial fare, but having provided beds for upwards of three hundred individuals.

The principal features of the Exhibition are the varied and numerous entries of cattle, sheep, pigs, goats, poultry, and machinery.

Of the domesticated animals, the Exhibition is one of unequalled success. Whether viewed in detail or taken as a whole, according to the different classes, the general excellence of the stock shown, and the features of interest which many of the breeds possess, renders this collection highly attractive to the public, and full of instruction to agriculturists. In the Palais de l'Industrie are brought together, from many different quarters, breeds of cattle similar and diversified. Here are to be traced changes in the structural formation, the influence of soil, climate, and the character of the domestication the animals have been subjected to. In some instances, the type of a peculiar breed remains, bnt there has been a gradual change in formation, which has become so firmly established as to give it the appearance of a distinct breed. Hitherto we were unacquainted with the origin of several of our much-prized breeds of the bovine family. Within the Palace can be seen the original stock from which have branched off breeds justly prized in the United Kingdom. In every instance the breed has been improved. This improvement is evidently the result of skill in selection, aided by the food being generally more succulent from the moistness of the climate. The Devon breed of cattle is the most agile, handsome, and delicately-formed breed in England, with the peculiar type strongly marked, as to form of the body, colour of hair (dark red), and the peculiar set of the horns. From Bohemia and Moravia, are exhibited cattle with all the characteristics of the Devon, with the exception of being somewhat diminutive in size. They might appear in the class of Devons, and compete in some instances successfully, with the animals forwarded from Devonshire. In studying this interesting breed of Bohemia, the mind almost insensibly speculates as to the agents who originally transported this breed to the south of England, whether the Romans or the Bohemians. The latter, at the period they were conquered by the Austrians, having suffered terrible persecution for their religious opinions, a small band of these persecuted Bohemians may have voluntarily exiled themselves, taking with them their cattle, and, in their wanderings, ultimately finding their way to England. The Breton breed from the west of France are even more diminutive than the Shetland breed; with this exception, they are identical in every point as to structural formation and colour, and both are equally remarkable as milkers for their size, being, contrasted with Ayrshires, considerably less than one-half the weight. Of the two breeds of cattle known as the Fife breed, the smallest of which have a peculiar twist in the horns, both are to be seen exhibited from Holland. The largest of these, known in Holland as the Dutch breed, extends over part of Belgium on the north-east of France, and is known in France as the Ardennes breed. Of the origin of the Fife breed, with the introducers of them into Scotland, there remains now no doubt. The much-prized dairy breed of Ayrshire have had various origins assigned to them by those who have written upon the question; not one, however, traced the original breed. In the Exhibition, there are exhibited from Denmark several breeds; one of their best dairy breeds is identical with the Ayrshire in every point of resemblance. So strong is this resemblance that visitors from Scotland have been impressed with the idea that the stock exhibited are animals either originally obtained from Scotland or are directly descended from them. The assurance of the Danish Commission that the breed have been habitants in the best pasture districts of Denmark from time immemorial, furnishes evidence that the Danes, as invaders of our west coast, introduced the breed now known as the Ayrshire. These are the most striking features as regards the evidence of the origin of some of our breeds. Other curious and instructive points in reference to resemblance in different breeds are brought out in the Exhibition. Of the numerous varieties of breeds of cattle sent by the Austrian Government to the Exhibition, one of the most beautiful is the white breed, which inhabits the rocky plains of Hungary. This is identical with the Charollaise, a French breed which prevails over the district be-

tween the Loire and the Seine, which district was the favourite residence of the Romans when masters of Farnce. In Lombardy, we have also the same breed. This Roman breed of cattle is, from its size, handsome form, and white colour, one of the most beautiful of the bovine family. The Roman cultivator, with four or six of these white oxen before him drawing his plough, must have presented a picturesque object, whether turning the soil on the banks of the Po or the Loire, or on the plains of Hungary. The oxen used for draught are exhibited along with the breeding animals. The harness is present, with the peasant ploughman in attendance, with his Eastern cast of countenance and somewhat haughty bearing. These silver-grey oxen have horns upwards of four feet in length, which spring upward, and are partly turned in. The animal, by simply turning the head, can defend by the horn any part of the body, and more than one of those exhibited are disposed to show their agility in preventing any one from touching them.

In the Austrian department, and coming from the mountainous parts of Tyrol, are cattle closely resembling the Schwitz breed, showing an affinity, if not a common origin. The Schwitz cattle are improved Tyrolese. The dark grey dun colour, the loose skin at the throat, the general contour, give the appearance of affinity to eastern breed. Whether the Schwitz breed came from the central plains of Asia or not, it is difficult or rather impossible to determine; but the resemblance is considerable with the larger breeds in the north of India. There is, evidently, a common origin with the breeds which graze the sides of the mountain-ranges that pass through Austria, onward through Switzerland. The cattle which are exhibited by Austria, besides those above described, have some resemblance to the Ayrshire in form, and in the mixture of colours —brown and white spotted being common. The horns of several of these are pointed somewhat like those of the antelope. The Shorthorn has not yet been introduced into Austria. Once introduced, they will rapidly change the character of the various breeds of that country, which are capable of great improvement by crossing with the Shorthorn. The Fribourgeoise, Vermoise, and Schwitz breeds are all well represented in numbers and in quality. Many of the animals are fine specimens of the ox—large, powerful, and vigorous—with a close resemblance in the type.

Of the numerous breeds which France furnishes, the Flamande is the best represented. This beautiful dairy breed finds many admirers. The Normandy breed is well exhibited. The Charollaise are full in members, but somewhat deficient in fine specimens of this most beautiful breed. The Gasconne, Garonnaise, Bazadaise, Limousine, Salers, Parthenaise, Courtoise with allied breeds, are present in considerable numbers. Several of the animals are fine specimens of their respective breeds. The Bretonne exceed in numbers the other breeds. Several most beautiful animals are exhibited of this breed.

Next in importance as to numbers, but excelling all other breeds, are those breeds from England and Scotland. The Shorthorns are generally superior, particularly the class of aged bulls and yearling heifers. Very general dissatisfaction has been expressed at the decision of the judges in almost every class of the Shothorns. The best cows, heifers, and in one or two instances the best bulls, have been set aside. It is understood that this arose mainly from an arbitrary proceeding on the part of the French gentlemen who formed part of the jury, those animals in the fullest condition being deemed too fat for breed. Thus Lord Feversham's bull, which obtained the first prize in the class last year, was passed over. Mr. Douglas's cow, which hitherto has been always successful, and his best heifers, were also passed over. The dissatisfaction felt at the decisions will act as a barrier to future success in the class of the Shorthorns. This is cause of regret, as the success of any exhibition depends upon a spirit of competition on the part of the best breeders. This alone gives interest to a show, as second-class breeders seldom exhibit any but second-class animals.

In the other classes, Ayrshires, polled Scots, West Highland, &c., the decisions of the judges are, upon the whole, good. There was considerable difficulty in arriving at correct decisions in the polled Scots and Ayrshires, as the competition was close many superior animals being exhibited. In the whole classes of the polled Scots not one inferior animal was exhibited, and never upon any previous occasion was there such a large show of first-class animals. Thus the breeders of this very valuable breed have paid the highest compliment in their power to the French nation. The show of West Highland cattle was also excellent, and reflects credit to the exhibitors.

The Channel Islands' breed, such as the Alderney's &c., were excellently represented. Several most beautiful specimens of this dairy breed were shown. The Herefords made a poor appearance as to numbers—five animals being shown; several were good animals, but not equal to those of the previous year. The Devons were better represented as to numbers and quality. The Herries breed made a poor appearance both as to numbers and quality. The superior dairy breeds from Holland were well represented, many fine animals for the dairy being exhibited. Of the breeds forwarded from other countries, there is little demanding special observation.

Buffaloes are present, and these appear to be the most docile of animals. They are only suitable for hot climates, and where water is in abundance. As animals of draught they are equal, and in many cases superior, to cattle.

Of sheep, the Merino takes the first place as to numbers, Saxony having a special exhibition of her Merinos, the producers of the finest wools in the world. The Southdown is well represented, Scotland furnishing a respectable quota to this section. The Cheviot sheep is well represented. The short woolled sheep of France make a poor appearance beside the improved breeds from the United Kingdom.

Of pigs, the English exhibitors are the most successful, several superior animals being shown.

The goats form an interesting section of the conconrse. Many of the animals exhibited are extremely beautiful specimens of this interesting animal—oriental in origin, and in ancient husbandry forming no unimportant part of the wealth of the shepherd husbandman. In France there are Departments in which the number of goats kept exceed ten thousand.

The poultry are, upon the whole, creditable to the exhibitors, but there is not the number competing which might have been expected. Of pigeons and rabbits there are some curious specimens.

In the prize lists, notwithstanding the grave errors which have been committed in the Shorthorn classes, Scotland has acquired an honourable position, particularly in the exhibition of products of the soil. The cereals, grains, and seeds exhibited from Scotland excel those from any other country, a sufficient proof, if any was required, that, as cultivators of the soil, they maintain the high character that has been universally awarded them since the beginning of the present century. To advance requires, however, their careful study, for the desire for improvement has been awakened in Europe, and in the race they may otherwise lose their position.

In the department of collections and samples of seeds cultivated for human sustenance, the display was upon the whole creditable. There was an absence of any very superior collections of seeds, that of Messrs. Lawson, Edinburgh, excepted, which was the most extensive and first in merit as to arrangement and classification, maintaining the high character of this firm for correct naming and description. A grand gold medal was awarded Messrs. Lawson for this collection.

On Saturday afternoon, the Emperor, accompanied by the Empress and suite, visited the Exhibition, spending the most of the time in going over the horticultural exhibition, which was arranged in the centre of the building. On Sunday, at mid-day, the Exhibition was opened to the public at an entrance-charge of one france. For some days the Exhibition will be the great centre of attraction. Many of the large proprietors and agriculturists have been attracted to Paris by the fame of the splendid exhibition of animals congregated together for the first time.—*Edinburgh Paper.*

AGRICULTURAL REPORT.

It is very satisfactory to be able, in my first Agricultural Report for this year, to congratulate farmers on the very favorable commencement of spring, succeeding a stormy, and rather severe winter. From the middle of April the land has been generally in good condition for agricultural operations, whenever justice had been done to it last fall, as regards ploughing and draining,—and on well managed soils, sowing might have been commenced shortly after the middle of April. The snow passed off this year without producing any flooding, and land properly drained was soon in a dry state for sowing, and there was scarcely any rain up to the 18th instant. Meadows and pastures have not suffered injury by frost, as they did last year; but lands seeded down last spring have not succeeded very well, in consequence of the drought of last summer; and in many cases from the weight of the grain crop, where the land was very fertile, the young clover and timothy plants were destroyed for want of space and air. The spring has been cold and dry, and hence very favourable for sowing and planting, which should now be in a forward state towards completion, with the exception of wheat sowing, which, in order to escape the ravages of the wheat fly, is generally put off to the last week of May and first week of June. This year, however, some farmers have ventured to sow wheat early, when they had an opportunity of doing so in April; but the weather has been so cool, that the young plants have not made much progress yet, and should the early sown wheat not come into ear previous to the first of July, it will probably be more or less damaged by the fly. With all the injury to be apprehended from this insect, I would venture to sow early, provided I could do so previously to the 15th or 20th of April, as I have very frequently done for several years after I first came to Canada. It would appear that, for the last 20 years the sowing time has not commenced so early as for the previous 18 years. In the first period, I have frequently sown wheat from and upon the 1st to the 15th of April, and it was considered very late indeed if sown after the 1st of May. Of course, we then had only varieties of wheat, which required four months to mature from the time of sowing. Now, we have got varieties which mature in three months from the time of sowing, or we should give up cultivating wheat. Our climate must, undoubtedly, be very favorable, when in three months from the day of sowing, a very good crop of wheat may be harvested, producing from three to four quarters of good grain, or from 24 to 32 bushels per acre, which I have known farmers to raise here, by proper cultivation and management; and if one farmer can do so, what is to prevent others doing so? To obtain favorable results in agriculture, every act of husbandry must be done well, in the right manner, and at the right time; and in order to be able to accomplish this, the best implements, the best and cleanest seed, sound practical experience in the art of agriculture, and close personal attention, are actually necessary,—and without all these qualities combined, and in action, we need not expect large products from our lands. I have not had sufficient opportunity this spring to see what progrees has been made in sowing and planting, but I know there has been a favorable time for both these operations, where anything like justice has been done to the land last fall; and at this date the spring work should be very far advanced, with all agriculturists who are desirious to "do the work well, in the right manner, and at the right time." Peas, beans, oats, barley, Indian corn, vetches, potatoes, carrots, parsnips, mangold wurtzel, might all be sowed from the first moment the land was in good condition. There is no injury to be apprehended from sowing all these crops as early as the soil is in a fit state to receive the seed. When the soil is in a good state of preparation before sowing, and left properly drained after sowing, the agriculturist has done his part so far, and he may confidently hope for favorable results; but he must not relax his attention, or neglect the after cultivation and weeding that may be necessary, until the crops are at maturity. It will be fortunate for those farmers who have availed themselves of the dry weather to sow and plant all they could, previous to the late change to rain. At this period of the spring, it is quite necessary that most part of the work should be finished, and that we should only have the wheat to sow. In our rather short seasons, the seed should be put into the soil as early as it is possible and expedient to do so. In preparing wheat for sowing, the seed should be steeped in a strong pickle of salt and water, the grain frequently stirred, and the light grains skimmed off and separated. After steeping a few hours, the wheat may be drained out of the pickle, and dried with lime, gypsum or wood ashes, before sowing. The clover and grass seeds should be sown after the wheat has obtained the first harrowing, and these seeds should be also harrowed in with a light harrow. If guano is applied, it is considered a good plan to harrow it in with the wheat. The quantity should be about two cwt. to the acre, previously mixed with double that quantity of salt, if conveniently procurable at a fair price. If salt cannot be had, wood ashes might be substituted. This application would be rather expensive here; but if the land is sufficiently fertile, there is no necessity for guano. To sow wheat, however, where there is not sufficient fertility in the soil to produce a good crop, is a very unprofitable practice. In a good system of agriculture, crops are not attempted to be grown, unless the land is in a proper state of preparation to produce a fair crop; and the sooner we adopt the same general rule, the better it will be for us. As much as from 10 to 20 tons of farm yard manure, and from 2 to 4 cwt. of guano, is applied to the acre of land for root crops in England, and frequently half a ton of guano, without other manure, to the acre for potatoes. Guano does not produce much effect when its application is succeeded by very dry weather, and therefore, in top-dressing cultivated crops, or grass land, it should, if possible, be applied during rain, or immediately before it. It is, however, nearly useless to apply guano to crops where the land is not properly cultivated and clean, and it is as hopeless to expect good crops of wheat on five-sixths of the land that is sown with that grain in Lower Canada, under the present usual system of cultivation for it. Farmers may imagine they grow fair crops when they are very deficient from what ought to be considered a fair remunerating crop. Wheat is a grain that requires that the soil should be clean and properly cultivated for it; and we need not expect to raise heavy or remunerating crops of it where the land is not in a proper state of preparation. Buckwheat should be sown as soon as possible after the other crops are finished. Last year a large portion of this crop was destroyed by early frost. It is said to be a good crop to sow clover and grass seed with, to lay down land. Great attention is necessary to have the furrows and drains in all cultivated fields well cleaned out, and when the time arrives for weeding, that there should not be a weed suffered to remain in the crops. It should be the farmer's delight to do all in his power to give his crops a fair chance of succeeding; and when he has done this, he may confidently hope and trust in the goodness of the Creator for favorable results in the harvest. The farmer who cultivates well, does so in confidence and hope that an abundant return will reward him fully; but the careless cultivator appears to have no hope that his toil and care would receive any reward, and therefore he expends the least possible amount of labor or care upon his land and crops, takes his chance, and is quite content with their return, whatever it may be. I hope the season may continue to be as favorable as its commencement up to this time, and we shall have abundant cause to be thankful.

WM EVANS.

Cote St. Paul, May 27, 1856.

A Model Agricultural Experiment.

In Baron Liebig's new work, "Principles of Agricultural Chemistry," with reference to late researches made in England, we find the following lucid account of the means by which a few acres of absolutely barren land were rendered fertile by the great chemist. It serves as an admirable illustration of the importance of both the mineral and organic ingredients of plants, and of the great expense of supplying these to a soil in which

they are all, or nearly all, naturally deficient. We may merely explain that the mineral manure alluded to was a preparation made up to imitate as nearly as possible the proportions of the composition of the *ashes* of wheat and other cultivated plants.

"During the years 1845 to 1849, I made a series of experiments on the action of the different mineral manures, on a considerable scale, on a piece of land of about ten English acres, which I purchased with this object from the town of Giessen. Previous experiments, which I had made in my garden in the town, had yielded no result. Whatever I did, or whatever I might add to the soil, I was unable to trace any perceptible effect from any of my mixtures. The only cause which I could discover for this apparent want of efficacy was the composition of the soil of my garden, which, by previous cultivation and manuring, had become in itself so rich in available mineral constituents, that the addition of a relatively insignificant quantity of these substances, became, when compared with the amount already present in the soil, quite inappreciable. This induced me to purchase the land alluded to, a sand pit to the east of the town, which I found to surpass all others in the whole surrounding district in its nearly complete barrenness for the ordinary cultivated crops. I do not believe that, in a whole year, there grew naturally on the whole ten acres as much grass or other fodder as would have sufficed for a single sheep. The soil is in part a light sand, in part it consists of more or less coarse quartz pebbles and thin strata of sand with some loam.

I filled with the natural soil a number of flower-pots, in which I sowed wheat, barley, and red clover, and manured each with some single mineral manure. In none of these did the plants get beyond flowering. The land therefore was of the quality adapted to the object I had in view.

Messrs. Schwarzenber and Co., of Ringkuhl, near Cassel, were so obliging as to prepare for me, in their soda works, according to the prescriptions I gave them, a quantity of mineral manure, which was spread uniformly over the land, except a portion used as a vineyard, on which there were about two thousand vine stocks, each of which, on being planted, had a quarter of a pound of the manure mixed with the earth about its roots. On the different sub-divisions of the land there were sown wheat, rye, barley, clover, potatoes, maize, topinambour; some small lots had sawdust added to the mineral manure, one had only stable manure, and another equal parts of stable and mineral manure. With the exception of the stable manure used for these two lots, no ammonical manure, and no animal substance was applied to any part of the field. One lot had several cart-loads of forest soil from a neighbouring wood; another had a mixture of forest soil and mineral manure.

Several of the most distinguished agriculturists of the district, and among them Herr von Fernhaber, thought that I could not succeed in growing wheat or clover on this soil; and the opinions of these gentlemen with regard to my enterprise are still fresh in my remembrance. I had calculated only on a very small produce in the first year, as the soil had never before been under cultivation; but however moderate, nay poor, the harvest was, it yet surpassed that which I had anticipated. It was indispensable that some years should elapse, before the constituents of the manure could be rendered soluable, and thus diffused throughout the soil. The barley was better on the lot manured with forest soil and mineral mauure than on the other: on the lot which had been manured with sawdust and mineral manure, the plants were also larger and stronger; the lot with stable manure and mineral manure yielded a crop of wheat as rich as that on any of the best of the neighbouring fields. It was the effect of the sawdust, and of the organic matter (humus) in the forest soil, and in the stable manure, which first opened my eyes to the true action of humus and decaying organic matter in the soil (see Proposition 14), and my previous notions on the subject were thus corrected and enlarged. The crop of turnips, clover, and potatoes was, however, not yet sufficient for the keep of a cow. Only the rye and part of the potatoes were exported from the farm. I shall perhaps, at a future time, return to the description of the individual observations; and I only remark here, that, without any supply of manure from without, all the lots looked much better in the second year, and yielded a far higher produce. This fertility steadily increased, so that, in the fourth year, the lots excited the admiration and wonder of all who had known the original state and quality of the land.

I had an opportunity, four years after the commencement of my experiments, to show my little farm to the Privy Councillor von Beckedorf, President of the College of Rural Economy in Berlin, and to the State Councillor Reunin, who, by his position in Dresden, exercises so beneficial an influence on the agriculture of Saxony; and I remember with satisfaction the lively interest which they took in my experiments. In the year 1849, my former gardener, Kappes, purchased the land from me; and this industrious man, who has not the means to buy manure, farms with profit the little property, now in good heart. He is able, with the help of a small coffee and beer trade in the summer months, to support himself and his family on it; he keeps two cows, raises annually several oxen, and has gained what has enabled him to increase the farm buildings, —and all this without ammonia or humus, by means of mineral manure alone. A farmer in the neighbourhood Aubel, in Wiseck, wrote to me in 1853 about the land, as follows. "With us the wheat crops are very poor; but on the height (the land is called in Giessen Liebig's 'height') they have harvested from 3 fuder of rye 12 simmer; while I, from 3 fuder of the best rye have only got 5 simmer. If you were to see it, you would be astonished; it is truly wonderful."

It was only after the lapse of four years that the mineral constituents added to the soil gradually came into action; and the land will, as may easily be foreseen, retain its present fertility, if a quantity of these mineral constituents, equal to that contained in the crops off the land, be annually restored to it.

The action of the several ingredients of the manure showed itself in a most striking manner, in many cases so as to excite astonishment. The deficiency or excess of phosphate of lime and of the alkalies for root crops, of the alkaline earths for clover, and of silicate of potash for the cereal crops, could be distinctly traced in their growth. The experimental lots were as the writing on the pages of a book,—intelligible even to the uninitiated.

I have every reason to believe, that by means of the organic refuse left on the land from the crops removed (stubble, roots, leaves, &c.), in consequence of their decay, and of the action of the carbonic acid formed from their carbonaceous constituents, mineral food for plants was extracted from the original soil and rendered available, which had formerly been utterly without effect.

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VENTILATION AND CONSUMPTION.—The heating process of our domestic ovens, of course, is not complete unless every breath of cold air is diligently excluded, and exceeding care is accordingly taken by keeping the windows closed, by constructing double casements and other ingenious contrivances, to make the atmosphere not only too hot for health, but too impure to breathe. A hogshead of pure air is computed the necessary allowance for a pair of healthy lungs per hour, and we are sure our ladies hardly get a thimbleful in the course of twenty-four. The excessive furnace heat so rarifies the atmosphere, that it becomes as weak in oxygen as the boarding-school beverage was in coffee, which we used to believe was made by carrying a pot of boiling water through the kitchen while the genuine Mocha was being roasted for the master's breakfast. This scant supply of oxygen is, of course, soon sucked up by the exhausted lungs, and as no fresh air is admitted, the poisonous carbonic acid, which is thrown off by expiration, must be again taken in by inspiration. The result, of course, is ill health. A Dr. McCormick has just written a clever book to prove that consumption, which is the most extensively mortal of all known diseases, is caused entirely by the want of pure air. We are not prepared to give in our adherence to the docter's views in regard to consumption, but there would be no difficulty in pointing out many other

diseases in the nosology which are undoubtedly caused by a want of proper ventilation. —*Harper for June.*

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Gooseberry Mildew.—It is well known that mildew is so destructive to gooseberries in this country, that but few of the large and choice kinds ever perfect much of their fruit, and as a consequence one of the nicest of fruits is but little seen in our market, in a ripe state. The writer of the Calender for the Horticulturist, gives a very simple remedy, which if as good as represented, is well worthy of entensive application. The following is the remedy and as we read it, merely requires the application once, " when the fruit is forming :"

Mildew may be prevented, by watering with soap-suds, over the branches. A radical cure for this pest may be formed by mixing a peck of lime and a pound of sulphur, in ten gallons of water ; let it stand and settle. A pint, in 4 gallons of water, syringed over the bushes when the fruit is forming, will keep them clean ; cover the ground with manure, and spread a small quantity of salt over it, to keep as much moisture as possible about the roots.

Mulching is undoubtedly a good thing, as it keeps the roots in a more uniform state as regards heat and moisture, and salt is recommended by several different writers just at this time. Our experience goes to prove that if planted under this shade of trees somewhat, they escape mildew, although the fruit is small. The fine show varieties of England are much more subject to it than the small rongh kinds. The whitesmith and Houghton, are perhaps the safest to plant. E. S.

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On Feeding Horses in Traveling. —Messrs. Editors—I have been traveling on horse-back for more than seventeen years, within the parishes of Louisiana. As regards the face of the state of Louisiana, it presents a great diversity of roads and bayous, some part of the country being sloping valleys, others flat ridges or coteaux, the upper part of swamps ; others, such as the roads along side of the banks of the bayous and furthermore in the southwest part of the state, Attakapas and Opelousas, are very extensive prairie roads. As a physician traveling on horse-back for that space of time, I have lost only one horse upon a journey during that period. He was traveled within this warm climate of 80° in a summer day, between fifty and fifty-five miles without eating. The day previous he was fed with many others in the same stable ; the mess of corn for all the horses was thrown into a large trough, and they were all loose, and had free access to the whole. I have always believed that his death was owing to riding him too long without eating ; and even after this long travel I have no doubt he would have done well if he had been in a separate stable, and been restricted to his portion alone as formerly. I have tried two modes of traveling. I have waited in winter for breakfast and then rode until night, and have always found myself and horse very much worn down at the end of the day's journey. My usual mode is to start two or three hours after day light, and travel about five miles an hour until eleven or twelve o'clock, depending in some measure upon the distance of the stand or place that I wish to reach. In the winter season we generally rest from one to two hours, and can make our stopping place for the night in good time, averaging forty-five to fifty miles per day. In the summer, I start at daylight, and ride till eleven or twelve, and rest till two or three. My horse is as fresh in the afternoon as in the forenoon, and I can travel from fifty to fifty-five miles a day without much distress to myself or my horse. I give my horse as much food as he will eat during the night, but nothing in the morning in the way of meat, but always as much good water as he will drink. I have traveled as fast and as far in the same time, as any other physician in America, and I do not now recollect ever to have injured a horse except the one mentioned above ; and I am well satisfied that the latter mode of traveling is greatly preferable to both horse and rider. J. B. C. Gazzo.—*Gazzoton, Lafourche Parish, La.*

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A. Productive Tree.—A. Loomis of Byron, Genesee county, N. Y., says that the past season, a tree of the Baldwin apple, standing on the ground of his brother, produced last year twelve barrels (besides four or five bushels of wind-falls,) that sold for $2.25 per barrel. The year's product of this tree was consequently *twenty-seven Dollars*—quite equal to an acre of wheat in nett profit.

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Experiments on the Elementary Principles of Agriculture.

Such is the title of the last contribution to agricultural knowledge from the pen of the late Philip Pusey, editor of the Journal of the Royal Ag. Society, of England. In addition to the inherent value of the facts reported, and of the inferences deducible therefrom, somewhat of a melancholy interest will be felt by some in perusing this report, on account of its being the last communication to his agricultural brethren by one who held such a high place in the esteem of the public.

In this brief article we shall submit to our readers all the more important items of the original report, in a much condensed form.

The experiment was made on a field of eight acres, set apart from common cultivation for the purpose of accurate experiment. The soil was of no great depth, resting upon marble rock, and was exhasted by five previous crops of grain grown in succession to such an extent as to be an accurate test of artificial manures. Mr. Pusey thou ht that the most interesting use that could be made of it might consist in the separate application of those elements which are supposed to constitute conjointly the efficacy of farm-yard manure, and separately to act as fertilizers of the soil.

These elements, according to the received theory of agricultural science, may be comprised under four heads: 1. Nitrogenous substances ; 2. Phosphorous ; 3. Alkalis and principally Potash ; and 4, That which constitutes the bulk of farm-yard manure, the strawy matter, or, in chemical language, carbon.

The nitrogenous matter employed was nitrate of soda, which has been proved to be tantamount to ammonia for agricultural purposes.

The experiment was made by drilling separately superphosphate and peat-charcoal with wheat in the autumn, and top-dressing a portion of each lot in the spring with the nitrate of soda. The fourth element, potash, was also applied in the spring.

The question of the efficacy of superphosphate on wheat, seemed to be especially of interest because of its vigorous efficacy when applied singly to the growth of turnips.

The result of the trial is given in the following table :

Quantity of Manure per Acre.	Bushels of Wheat per Acre.	Ditto with a top-dressing of 170 lbs of Nitrate per Acre.
4 cwt. of Superphosphate,	7	19½
7 cwt. of Peat-charcoal,	8½	18
No application,	7½	19 3-10

From the result of this experiment Mr. P. thought it evident that the superphosphate, though all important for roots, had done nothing for the wheat, even on such very poor and exhausted soil, on which the efficacy of concentrated fertilizers is most easily discernible. The charcoal would appear in the first column to have done something, but as that result was not confirmed by the combined trial, the difference was very probably accidental.

The fourth element, potash, was tried by top-dressing an acre of wheat with 1 cwt. of pearl-ash ; but it was evidently inoperative on the crop. So much so that separate thrashing was deemed necessary.

As far, then, as we can rely on this experiment, carefully made with soil duly prepared by previous exhaustion, it testifies, as Mr. P. remarks, that the only element of farm-yard manure required by wheat is nitrogen, as contained either in nitric acid or in ammonia. If this be true in an exhausted soil, where the plant can only find its other elements in the soil as it gradually crumbles down, or in the atmosphere, it must be still more true in practical farming, where they will be supplied ordinarily by manure applied to the other crops of each course.

As to one element of farm-yard manure—the woody or carbonaceous matter—the experiment is not conclusive, because, as remarked by Mr. P., though carbon applied as *charcoal* did not operate on wheat, the woody or strawy carbonaceous matter con-

tained in ordinary manure, being more easily decomposed, might be operative.

In this experiment the produce is very low. This was owing to the gradual impoverishment of a naturally poor soil by a succession of grain crops, aided by the cutting winds of a harsh spring, which had almost blown the plants out of the soil, and rendered them almost invisible in May. In a more sheltered part of the same field the result was much better.

The *negative* results of this experiment go so far to prove the inefficiency of certain chemical elements of manure on the wheat-plant. Its *positive* result goes to prove the benefit of nitrogenous applications, and of top-dressing as one mode of applying such substances. Top-dressing is, probably, deserving of more frequent trials in ordinary practice.—*From the Cultivator.*

The above experiment is one of those that may be liable to exception on account of our not knowing the precise composition of the soil. If by "marble rock," the writer means one of the English secondary limestones, then the failure of the superphosphate may have been owing to the presence of large quantities of phosphate of lime in this rock, and the soil resting on it. In many soils potash would add so little to the quantity annually disengaged in the soil itself as to produce no appreciable effect. No doubt can, however, rest on the result that nitrate of soda on such poor soils produces a marked effect, and we may add that guano, the liquid manure of stable and old animal composts, if harrowed in with the seed or applied by watering the young grain, will furnish an equally certain supply of nitrogen, and hence probably produce quite as good results.

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Economical Mode of Setting Out Fruit Trees.

If we could persuade every reader who owns a farm to plant out this spring two or three acres of fruit trees, we should consider that we had done more for our country than Parliament with its long speeches and enormous expenditure will be likely to accomplish for the next ten years. The *cost* of the trees is something, but to most of our readers who till their own soil, *that* is a small item. The labour of preparing the ground, setting out and cultivating an orchard, is a bugbear to many. So many have set out trees, and so many trees have died! But if farmers treated their wheat-fields as too many treat their young orchards, would they expect to find a crop at harvest time? We shall have mething to say in a future number on the care and management of fruit trees. Our present purpose is to point out a cheap and convenient plan for preparing the ground and planting out trees. It is too late now to reduce it to practice this season, but may be useful hereafter.

"After the land is prepared as for common farm crops, by such manuring as may be afforded conveniently, and by as deep a plowing as a single team will give with a common plow, proceed to measure off the distances of each row, and mark the places by stakes. Then begin by plowing a small "*land*" about six feet wide, so as to leave the dead furrow where each row of trees is to stand. Repeat the plowing on the same piece of ground several times, until the earth is thrown out down into the subsoil to a depth of about two feet. Then mark the places, by stakes, where each row *crosses* these at right angles, or in other words where each tree is to be placed. Deposit near each crossing, half a cubic yard of compost or old manure, throwing a portion of it about the place where the tree is to stand. Then proceed to plow the earth back again, one man being employed at the same time to pass along the row and to scatter the compost gradually and successively over a space of six by eight feet about the place for each tree, while the plowing is going on. In this way, a bed of rich, deep, mellow earth, formed of thoroughly intermixed soil and compost, over a space six feet by eight, is made at the place for every tree. An excavation large enough for the reception of the roots, is quickly made in this mellow bed of soil, and the tree planted by placing the unmanured and adjacent top soil next the roots. This mode of planting will be decidedly better than in holes dug by hand, for these strips of land being down the natural slope of the land, as they always should be, form a channel in the subsoil through which any surplus water, (which would otherwise originate in the dug hole,) may easily sink away and not remain about the roots to injure the growth, as all stagnant water does in a most serious degree. This is especially the case with holes dug in hard clay subsoils, which hold water like a tub."

The *Country Gentleman*, a leading American journal, informs us that this plan has been found very advantageous for large orchards. We think it will be equally useful in the case of one, two, or three acres, with less than which no farmer should be content.

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Agriculture in France and England.

The following interesting facts are from a valuable work on Agriculture in England, Scotland, and Ireland, by M. De Lavergne, one of the ablest French writers on agriculture.

SYSTEMS OF CULTIVATION.

"France has devoted herself too exclusively to the production of corn crops, which are the immediate food of man, without sufficiently considering the means necessary to uphold the fertility of the soil under this exhausting process. England, on the contrary, has been led, partly by the nature of the climate, partly by design, to take a sort of bye-path, which reaches corn crops through the intervention of green crops; finding, in the rearing of cattle and the supply of manure, the restorative process which is necessary.

"The experiment has entirely succeeded, and is extending itself day by day; and the remarkable fact is, that in proportion as the head of cattle increases, the quantity of corn increases also; the gain in intensity exceeds the loss in extent. Thus, on a surface of 31,000,000 of hectares, reduced to 20,000,000 by the waste lands, the British Isles produce more food for animals than the entire surface of France, of double the extent. Hence the supply of manure is, in proportion, three or four times greater. The average produce per hectare in France is 6 hectolitres of wheat, about 5 of rye, and 1 of maize or buckwheat—collectively about 11 hectolitres. In England, 25 hectolitres of wheat (3½ quarters per acre), more than double in quantity, and three times more in saleable value. Scotland and Ireland are included in this estimate. If the comparison is made with England alone, the results are far more striking. This little country, not larger than one-fourth of France, produces 38,000,000 of hectolitres of wheat, 16,000,000 of barley, 34,000,000 of oats. If France produced as much in proportion, she would produce, deducting seed, 150,000,000 hectolitres of wheat, 200,000,000 of oats and grains; that is at least double her actual production.

"Taking all products into account, animal and vegetable, it appears that the produce of England per hectare nearly doubles that of France.

"The great lesson which these figures teach, beyond the disproportion of the results, is the relation of vegetable to animal products. In France, the vegetable products form four-sixths of the whole, and the animal products two-sixths only; showing at first sight an exhausting cultivation, and one at least stationary. In the United Kingdom, the animal products are equal to the vegetable. Thus the animal products alone of an English farm are equal to the entire products, animal and vegetable, of a French farm of the same extent.

"SHEEP.

"The most remarkable feature of British farming in comparison with that of France, is the number and quality of the sheep. According to the statistical returns and estimates, the number of sheep in France and in England is about equal; and 35,000,000 of sheep in France, and 35,000,000 in

England. But this apparent equality conceals an inequality the most marked. 35,000,000 of sheep in the United Kingdom live on 31,000,000 hectares of land. 35,000,000 of sheep in France live on 53,000,000 hectares. France, in order to have as many sheep in proportion as the United Kingdom ought to have 60,000,000. If the comparison is made with England alone, the difference is far greater, England feeds 30,000,000 of sheep on 15,000,000 hectares of land; that is, proportionally, three times as many as France.

"But the great difference is in the quality of the sheep, upon the breeding and improving of which, with a view to weight and early maturity, so much care and attention has been bestowed. The weight of an English sheep is twice that of a French sheep. So that an English farm on an equal surface gives six times as much mutton as a French farm.

"HORNED CATTLE.

"In the case of cattle, the same care in breeding from select animals in the United Kingdom, and continually improving the races, in studying meat-producing qualities and early maturity, has effected results similar to the results produced in sheep. France possesses 10,000,000 head of cattle, the United Kingdom 8,000,000. In France three products are demanded from cattle—labour, milk, and meat. In England, only two—milk and meat. The yield of these two valuable productions is materially interfered with by requiring work also from cattle. It might appear, at first sight, that the work of cattle could not in an important degree influence the supply of meat, and it is not difficult for people to persuade themselves that labour in utilizing the life of an ox enables meat to be sold at a lower price. But experience has proved, that if this is sometimes a truth in detail, it is an error in the gross.

"The habit of labour forms hardy, vigorous races, which, like men devoted to hard work, eat much, fatten slowly, develop their bony structure, make little flesh, and make it slowly. The habit of inaction, on the contrary, forms races gentle, tranquil, which fatten early, assume round and fleshy forms, and give with equal food a far larger yield to the butcher. If we look to labour, the ox is killed when he has finished his task. If we loook to meat, the ox is killed at the moment when he yields the largest amount. Cattle, in France, are killed too young or too old; among the 4,000,000 head killed, figured 2,000,000 calves, giving each only 30 kilogrammes of meat. Those which survive, are killed at an age when the growth has long ceased, *i, e.*, when the animal has long been consuming nourishment which has not added to its weight,

"In England, on the contrary, animals are killed neither so young because in their youth they make the most meat, nor so old, because then they make none. The moment is seized when the animal has reached his maximum of increase.

"In France, the number of animals killed annually is about 4,000,000 kilogrammes of meat, averaging therefore 100 kilogrammes per head.

"In the United Kingdom, the number killed is 2,000,000 producing 500,000,000 killogrammes of meat, averaging 250 kilogrammes per head.

"Thus, with 8,000,000 head of cattle and 30,000,000 hectares of land, British agriculture produces 500,000,000 kilogrammes of meat; while France, with 10,000,000 head of cattle, and 53,000,000 hectares of land, produces only 400,000,000 kilogrammes.

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CUT WORMS.—In the year 1846, I had prepared an acre of ground for ruta bagas, with great care, determined if possible to raise a premium crop. The seed was drilled in by hand, and the plants came up beautifully. Visiting the field every morning, I soon began to discover a few narrow gaps; these seemed to widen every morning, and I at once came to the conclusion, that whatever agent was at work, he had no correct idea of proper distances, and that unless I could head him, he would soon head off all my plants. I went to work with my pocket knife, stirring the soil along the ridges, and I soon became so expert on the trail, that in a few days I had killed twenty-four hundred cut-worms. By this means I saved my crop, and took a premium after all. But now to the point which I had in view when I commenced, and which I fear you will think I have forgotten. Finding the ferreting out of those reptiles such break-back work, I thought that I might save some labor if I could trace out the parent. I therefore caught some full grown cut-worms, put them into a perforated pasteboard box, and set them on the chimney-piece in my sitting-room, feeding them with green leaves until in the chrysalis state. By watching them closely, I could perceive a change in the appearance of the chrysalites, and one morning on taking off the lid of the box, I was delighted to find it alive with fluttering moths. Just the dusty dull looking moths which fly against our lamps in an evening, and which on a morning we may find between our blinds and windows, and which I have never since allowed to escape, if possible to prevent them.—*Country Gentleman*

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THE RUSSIAN CORN TRADE.—The *Independence Belge* has the following letter from Hamburgh:—

"Hamburgh, is, perhaps, of all the maritime nations of Europe, the most interested in the Baltic trade. The corn business is almost exclusively centred in the hands of our merchants, who act as intermediate agents between Russian sellers and foreign buyers.—The corn, oleaginous seed, and other territorial productions of Russia, are all paid for through the medium of Hamburgh houses.—The news of the fortunate conclusion of peace was consequently recieved here with greater demonstrations of joy than any where else.—Everybody anticipates that the moment communications are re-opened a new brilliant era will commence for the commerce of the northren nations. Telegraphic dispatches received from the three Russian Baltic provinces state that measures were being taken to convey to the coast the enormous quantities of grain accumulated during the last two or three years in the stores of the interior."

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HOW TO SAVE FRUIT TREES INJURED BY MICE.—E. M. Bradly, Esq., of East Bloomfield, in a letter to the Rochester Democrat, says—

"I noticed in your paper of to-day an article copied from the Buffalo Express, relative to damages sustained by mice eating the bark from young fruit trees during the late severe winter; and stating that individuals have suffered from $800 to $1,000 each from this cause alone. I write for the purpose of suggesting to all, who may have suffered in this way, that if they will take the trouble to protect the injured part of the tree from the air that in nine cases out of ten the tree will thrive and show but very little injury from the wound. A very economical and expeditious method of accomplishing this is to take a dish of grafting wax, kept sufficiently warm to spread easily, and apply to the wounded part with a common paint brush, and pressing on to this a small piece of white wrapping paper or cotton cloth, to keep the wax from running when the sun shines upon it. Pieces of tarred or waxed cloth tied tightly about the wounded part will effect the same end, but the former method is cheaper and more easily applied.

I have in this way saved many valuable trees that had been badly eaten, and any one not acquainted with the process would be surprised to see how many trees could be saved in this way in a single day. A single man will dress from two to four hundred trees in one day in the above manner, with his material conveniently prepared, and at a very trifling expense."—*Ploughman.*

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USEFUL HINTS ON SHEEP—Mr. R. S. Fay, of Lynn, said sheep might be trained so as to be kept within their proper limits as well as any other animal. His own sheep pastures were enclosed with low walls, and though the feed was often poor, and there were vegatable gardens and much better feed adjoining the pastures he had never known his sheep to go over the walls. He bought them in New Hampshire and put them to his farm five years ago, and though they were as wild as any sheep when he purchased them he had found no trouble in keeping them within their proper bounds, though they were tended only by a boy fourteen years old. They had become perfect-

ly docile, and literally exemplified the Scripture language, "My sheep hear my voice," &c. If sheep are kept under the care of any particular person they will always come at his call. He thought nothing was more important for farmers than to have a certain proportion of his farm stock consist of sheep. There is no manure so fertilizing as that of sheep, and it does not so readily waste by exposure as that of other animals. Sheep are gleaners after other cattle, and will help to keep the cattle pasture in good condition by being turned upon them occasionally to eat the coarser plants which have been left by the cattle. They will enrich the land, too, and may be made exceedingly useful in helping to prepare land for a crop. A German agriculturist has calculated that the droppings from one thusand sheep during a night would manure an acre sufficiently. By that rule a farmer may determine how long to keep any given number of sheep upon any particular piece of land. Mr. Fay said he was accustomed to fold his sheep upon land that he designed for corn and other crops; and in doing so he shut them upon half an acre at a time, keeping them there by a wire fence, which was easily moved from place to place. He kept his flock of three hundred, five nights upon half an acre, and then removd them to another half acre, and in this way his land was well manured without the labour of shovelling or carting. He thought that the lambs and manure paid for keeping, and the wool was clear profit.

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Experiments with Superphosphate of Lime.

Mr. Editor:—Having made a trial for the first time, during the past season, of De Burg's Superphosphate of Lime, I send you the results, hoping they may be found useful to those engaged in agriculture.

The first was 150 pounds sowed the 21st of April on 60 square rods of natural mowing. The land was of good quality, but much exhausted by long cropping, situated on a side hill, with a clay subsoil. By the 1st of June the effects were visible at a considerable distance, and many persons visited the spot to observe the change it produced. In the middle of the lot my hired man, when he sowed the phosphate, had marked out the initials of a name, by putting on a much greater quantity of the fertilizer; those initials could be plainly read, and the grass upon them was probably three-fold greater than where only the average quantity was sown. This fact is important only as showing that the increase of crop was in proportion to the increased quantity applied. The clover, on the whole sixty rods, came up much thicker than upon the adjoining land, and at haying time it produced 33 per cent. more than where the phosphate was not applied. But this was not the least part of the experiment, for the second crop was still more remarkable than the first. It was fed down in the fall, and therefore could not be accurately measured, but no one who saw it doubted that there was an increase of at least 100 per cent. in the second crop. Nothing could well be more gratifying than the results of this experiment. It showed most conclusively the wonderful power of this fertilizer on grass land of the description named. I feel entirely confident that the first crop of grass *next year* on the same land will be much greater than it was last season.

I tried the same article on corn land. It was a dry knoll of poor exhausted pasture land, plowed in the fall, and in the spring 20 loads of stable manure spread and plowed in. The seed was the King Philip corn. Where the phosphate was applied in the hill at the rate of 400 pounds to the acre, the crop was doubled exactly, over that where nothing was put in the hill. The result on cornfodder, though not so striking, was very satisfactory, the increase being about 50 per cent.

I tried the same on potatoes. Those called the Jenny Lind were increased about 25 per cent. Other kinds nearly as much.

By my advice several of the farmers in my neighbourhood have made a trial of De-Burg's phosphate, and I do not know a single case in which it was not highly successful; and I am of opinion that there will be five times as much used in this town next season. All seem to be satisfied that they have found a fertilizer that can be depended upon; that will pay, and pay well.

The advantages of the phosphate are that it can be easily obtained, conveniently transported and readily applied. To manure a field at a considerable distance, or on a high hill, with barn manure, is a formidable affair, requires a strong team, and a great deal of hard work. To apply enough of the phosphate to produce equal results is a very small matter. It enables farmers to extend thier ordinary manures. It is particularly convenient for small cultivators, who often have some land, but no manure. To such the phosphate is the very desideratum. It is applied as easily as ashes, and is so effective as to answer every purpose.

Should the quality of the article be kept up, I feel quite sure it will be rapidly introduced into use. The only fears I have, arise from the apprehension that it may be adulterated, and thus rendered less effective and satisfactory. I do not know but the superphosphate prepared by other manufacrers may be equally good, but DeBurg's is the kind which I have used, and of that alone can I speak.

I hope that others will give their experience in the use of it, whether favorable or otherwise, so that the farmers may have as much light as possible on the subject.

Amasa Walker.

North Brookfield, January, 1856.

We copy the above article, by an intelligent correspondent of the *New England Farmer*, partly with the view of recommending to agriculturists the preparation of bones, known by the name of superphosphate of lime, and which is so valuable as supplying one of the most important articles of the food of plants; and partly to give a word of caution against the supposition that this substance can enable the farmer to dispense with other manures, as many persons might infer from articles like the above. The truth is that the phosphate of lime, which constitutes the earthy part of bones, is quite as necessary to cultivated plants as to the animals that feed on them, and that this substance is one of those which occur in the smallest proportion even in the most fertile soils, and which are most rapidly exhausted by cropping. Hence, on run-out soils, or those which are naturally poor, especially on soils not based on limestones, which often contain a proportion of phosphate of lime, the super-phosphate is almost certain to produce good results, especially on clover, root crops, and grass. The *animal matter* of the bones, when not destroyed by the mode of preparation, is also an immediate and certain source of fertility. But then this bone earth and animal matter are not all the substances necessary in a fertile soil, or taken from it by crops; and hence the farmer, to keep up permanent fertility, must still use his stable and compost manures, along with, or alternately with the superphosphate. We recommend all farmers to apply this substance, as well as crushed bones and guano, and note the results, which will in most cases be very profitable, adding greatly to the crops which could be obtained by the farm manures alone; but by no means enabling the farmer to dispense with those manures.

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A Tidy Bunch of Grapes.—The vinery of the Duke of Portland, at Welbeck, once produced the largest bunch of grapes ever grown in England. A bunch of the Syrian weighed 16½ lbs., and was sent by his grace as a present to the Marquis of Rockingham, and was carried to Wentworth-house, a distance of twenty miles by four laborers two of whom carried it on a staff by turns, just in the same way as the cluster of grapes was carried from the brook of Eshcol to the camp of the Israelites.—*London Times.*

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How to Make Butter Come.—I sympathize with an "Old Subscriber," in his inquiry—Why will not butter come? I have gone through the same experience, some years past; but for three or four years past, we have adopted the plan of heating the milk in a tin pan, when first brought in, so hot that a bright scum is all over the surface; then set it in pans, as full as you please to have them, for the cream to rise. Skim as you choose, either before or after souring, and churn in the usual way—(we

have Kendal's churn) We hope to set the milk where it will not freeze, but this winter it has in a few instances, frozen some. We have, however, no difficulty in having the butter come, and a rich looking sweet butter, that does not resemble the old fashioned winter butter that is exhibited in our shops. —*Cultivator.*

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INDIAN CORN—This important product is now receiving the attention of farmers. Many are inquiring for new kinds, on which the frosts of September will not operate. Great stories are told by those who have new kinds to sell, and it is supposed by some, that we may at length find a kind that is very early, very productive, and good for all purposes.

But we may as well count on having large pork from a small breed of hogs, as large corn from small and early ears. By judicious selections, and by saving the ears for seed which first become ripe, we can gain a number of days—and this is the best mode for farmers to pursue, if they would make sure work.

We want good sized ears because they yield more than small ones, and because it is easier to strip two good ears of their busks than to strip one small ear—thus we gain four-fold in the business of husking, in case the large ears contain twice as much corn as the small ears.

We cannot well afford to raise poor corn or small corn. We cannot afford to raise premium crops, or any thing near one hundred and forty-five bushels per acre. Very large crops cost too much unless they are accidental.

Corn has one advantage in a bad season. It will make a large quantity of feed for cattle, even though the frosts come so early as to spoil the grain.

Corn is the best article for supplying summer feed for cattle that have not a sufficient range of pasture.

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CULTIVATION OF MANGOLD WURZEL.

The importance which is attached to the root crops, in connection with the successful cultivation of the soil, renders questions relating to the improvement of this branch of husbandry of general interest.

The late Daniel Webster, the distinguished statesman, said that two successive failures of the turnip crop in England would cause national bankruptcy. The fertiliy of the land, in reference to the production of corn crops, is doubtless mainly dependent upon the supply of vegetable food, for the maintenance of cattle and sheep, particularly during the winter month. Without root crops, the inhabitants would require to subsist mostly without fresh meat for at least six months in the year, and the supply of fine wools for the purpose of the manufacturer would be greatly curtailed, as without substitutes for winter feeding, not one-half of the present supply of British wools could be furnished. Daniel Webster, doubtless, during his residence in England, had made himself acquainted with British agriculture, becoming strongly impressed with the intimate relation which subsists between the root crops and the fertility of the soil.

That the prosperity of the country is intimately associated with the production of our soil, both as regards corn and beef, with a supply of wool for the manufacturer, is undoubted; but the statesman had not sufficiently weighed the spirit of enterprise to rise above such a calamity as the occessional failure of the root crops, should this occur. The cultivation of the turnip is believed to be becoming more precarious than formerly. Several diseases are extending their ravages. The most formidable appears to be that termed finger-and-toe. This malady is not confined to any one variety, or to any particular description of soil, and is regarded with considerable alarm by many cultivators. It has been suggested to substitute in part the cultivation of mangold wurzel; this root to take the place in part of the turnip. In those cases where the turnip crop is repeated every fourth or fifth year, by growing mangold on a portion, the turnip would not be repeated oftener than once in eight or ten years; or, at least, such an interval would occur as to cause a less frequent repetition of the turnip. Those who advocate this change, assume that this disease is somehow connected with the frequent repetition of the crop. This, however, is liable to question, as finger-and-toe has been observed in turnips fields raised upon newly reclaimed lands. In Norfolk and elsewhere, upon the first introduction of the turnip, this malady was observed, and was the subject of frequent speculation as to cause and remedy.

By occupying a portion of the soil under green crop with mangold wurzel, the cultivator would be less dependent upon the turnip crop than he is at present. In carrying out such an arrangement, questions arise, however, which involve the propriety of attempting the cultivation of this plant under the ordinary circumstances presented by the climate of Scotland. Experiments made in East Lothian several years ago were, in their results, unfavourable to an extended cultivation; and these experiments, continued through several seasons, gave an average weight of roots considerably under the turnip crops grown under similar circumstances. The average weight was greatest in dry hot seasons; soil of medium depth, rich, and under 300 feet above the level of the sea. The variety grown was the Long Red. The experiments now being made in that county are conducted under peculiarly favourable circumstances; and should not be regarded as determining the propriety of the general adoption of the growth of the plant.

In the counties of Norfolk, Suffolk, and Hereford, we have observed a different result from that obtained in East Lothian, viz., that the average weights of mangold wurzel equalled, and in some instances greatly exceeded those of the turnip crop. The varieties grown were Long Red and Orange Globe. This would indicate that either from not wholly understanding the cultivation of the root in Scotland, or from the lower range in the summer temperature of the climate, Scotland is less suitable for its growth than England. As the question has lately assumed some importance, we direct attention to the conditions under which experiments should be undertaken by those, believing that mangold can be introduced to take its place alongside with turnip for the feeding of stock.

By rendering the soil unusually rich, the growth of mangold wurzel is known to be stimulated, and the facilities afforded by portable manures renders this easily attainable. It therefore becomes advisable to test further the adaptibility of the climate of Scotland for the growth of mangold wurzel. Such experiments may extend to one or more acres, and be made with more than one variety of this plant, giving a preference to the globe-shaped for heavy loams and shallow soils, and to the long conical shape for light loams and deep wrought soils.

The white mangold was at first recommended for cultivation as a forage plant. The quantity of green food raised during the summer and autumn months is stated to be very large. The leaves have been observed to grow one inch a day. In one experiment made by a Mr. Rocque in his garden, the stalks grew about four feet in 34 days. When cultivated for the leaves, the plant requires to be grown broadcast, or in about 9 inch drills —sown early in March, and the plants not singled, to produce the largest amount of leaves. But it is for the roots rather than for the leaves that the mangold is cultivated.

In northern Germany, mangold has been pretty extensively cultivated for about 100 years, and all the varieties now generally grown appear to have been long familiar to cultivators in Prussia. Its introduction into the fields in England did not commence till about the beginning of the present century, and one proprietor in Norfolk appears for a time to have been the only grower of this now extensively cultivated root. In the Eastern Counties, the proportion under mangold is generally about one-fifth of the whole root crop, turnips occupying the other four-fifths. Of the three varieties cultivated in England, Yellow or Orange Globe, Red Globe, and Long Red, the first is most generally known. It is considered hardier, better adapted for stiff loams, and is believed to produce the largest weight per acre. Where the soil is comparatively loose and deep, there can be little doubt that the Long red will produce the greatest weight. In some parts of Germany and Belgium, a long white variety, different from the Silesian or sugar beet, is grown. We have not, however, met with any fields of this in the United Kingdom. In these countries, this particular white variety is believed to produce the largest weight. By a series of analyses, undertaken in the United States, it appears that the Long Red contains the largest per centage of sugar.

In France, although the White Silesian variety is generally grown for sugar, both the Yellow, Round Red, and Long Red are also used for this purpose. The principal objection apparently to the red varieties, is that there appears to be considerable difficulty in getting rid of the coloured matter which is contained in the juice.

Beetroot is cultivated for four purposes—the garden beet, a dark red in the bulbous part, as well as having very dark purple coloured leaves, is only grown as a salad. The other five varieties, Yellow Globe, Red Globe, Long Red, Long White and Silesian (sugar) Beet, are cultivated for feeding the domesticated animals, and for the extraction of sugar or alcohols. The quantity of mangold wurzel grown on the continent for the purpose of the sugar manufacturer is very great. It is difficult to arrive at anything like correct information, as many of the continental States do not collect agricultural statistics.

Besides, as the manufacturing of sugar and the distillation of alcohol go on under the surveillance of the excise, and as there is known to be a very considerable evasion of the duties, the amount, as taken by the duties paid, does not represent the actual quantities. In France alcohol pays no duty, but sugar does; beetroot sugar paying about 11s 8d per cwt. When it is considered that not more than 6 per cent. of sugar is obtained from the roots, the quantity grown must be enormous: in France alone, about 170,000 acres of beet are grown for the manufacture of sugar and alcohol. The total amount is estimated by the official returns at 16 millions of tons. A corresponding quantity of mangold wurzel is known to be grown in the countries embraced under the Zolverein league, for the produce of sugar. The quantity of sugar produced is about equal to that of France, or about 170 millions of pounds.—*North British Agriculturist.*

——:o:——

KEEP YOUR CELLAR CLEAN.

By a beneficial arrangement of Providence, the gases and odors most prejudicial to human life, are lighter than the air which surrounds us, and, as soon as disengaged, rise immediately to the upper atmosphere, to be purified, and then returned to be used again.

The warmer the weather, the more rapidly are these gases generated, and the more rapidly do they rise; hence it is, that in the most miasmatic regions of the tropics, the traveler can with safety pursue his journey at midday, but to do so in the cool of the evening, or morning, or midnight, would be certain death. Hence also the popular but too sweeping dread of "night air." To apply this scientific truth to practical life in reference to the cellars under our dwellings, is the object of this article.

The ceilings of cellars should be well plastered, in order most effectually to prevent the ascent of dampness and noisome odors through the joints of the flooring.

The bottom of the cellar should be well paved with stone, cobble stones are perhaps best; over this should be poured, to the extent of several inches in thickness, water lime cement, or such other material as is known to acquire in time almost the hardness of stone; this keeps out the dampness of the earth below.

If additional dryness is desired for special purposes, in parts of the cellar, let common scantling be laid down, at convenient distances, and loose boards be laid across them for convenience of removal and sweeping under, when cleaning time of the year comes.

The walls should be plastered, in order to prevent the dust from settling on the innumerable projections of a common stone wall.

Shelves should be arranged in the centre of the cellar, not in the corners, or against the walls; these shelves should hang from the ceiling, by wooden arms, attached firmly before plastering, thus you make all safe from rats.

To those who are so fortunate as to own the houses in which they live, we recommend the month of June, but to renters, the great moving month of May, in New-York at least, as the most appropriate time for the following recommendations.

Let every thing not absolutely nailed fast, be removed into the yard, and exposed to the sun, and if you please, remain for a week or two, so as to afford opportunity for a thorough drying.

Let the walls and floors be swept thoroughly, on four or five different days, and let a coat of good white-washing be laid on.

These things should be done once a year, and one day in the week at least, except in mid-winter, every opening in the cellar, for several hours, about noon, should be thrown wide; so as to allow as complete a ventilation as possible. Scientific men have forced on the common mind, by slow degrees, the importance of a daily ventilation of our sleeping apartments, so that now, none but the careless or most obtuse neglect it, but few think of ventilating their cellars, although it is apparent that the noisome dampness is constantly rising upwards and pervading the whole dwelling.

Emanations from cellars do not kill in a night; if they did, universal attention would be forced to their proper management, but it is certain, from the very nature of things, that unclean, damp, and mouldy cellars, with their sephulchral fumes, do undermine the health of multitudes of families, and send many of their members to an untimely grave. —*Hull's Journal of Health for April.*

——:o:——

CIRCUMTSANCES ALTER CASES.

BY HENRY F. FRENCH.

How to apply Manure—Composting—Some Elements of Fertility Evaporate and others Sink—Deep Plowing—Seeding to Grass in Autumn—Sod and Subsoil Plow—Plowing Orchards—Distinction between Rules and Principles.

In a former article, I proposed to apply the idea suggested in the above caption, to the subjects of the application of manures, and of composting and deep plowing.

Shall I plow in the manure as deep as possible, or shall I leave it near the surface? Shall I compost it with mud or soil, and work it over to make it fine, or use it in a fresh and green state? The answers to these questions depend on circumstances, many and various. If you have a heap of common barn manure, and are ready to apply it this spring to your land for corn or potatoes, my advice would be, to mix nothing with it, but to spread it, and plow it in as deep as the plow will cover it, running to the depth to which the land has been usually plowed. As a general rule this would be the true method, but if the land be stiff clay, for reasons which will be presently stated, the manure would be more profitably applied nearer the surface. The common manures consist of various elements, some of which are readily converted into gas and fly off into the air, and others which are not volatile, but are dissolved by water and carried away into the streams or into the ground.

A large proportion of the value of common manures consist of ammonia, which is always produced in the process of decay and putrefaction, and is very volatile, and is diffused at once into the air, when set free, and so benefits the world in general, as much as the original owner.

Another proportion consist of lime in various forms, and of potash, soda, and common salt. —These are inclined to sink into the soil, and to pass off below, unless taken up by the plants growing there, or combined with other substances which retain them.

Where lime is used in large quantities, its effects are not considered permanent, but in a few years it is washed out of the soil, and it becomes necessary to repeat the application. This is well understood in the old countries. So it is said that common salt may be applied in sufficient quantity to land to destroy all vegetation, and that its effects will not last beyong the third year.

If, therefore, we place the manure near the bottom of the furrow for a hoed crop, we save all the ammonia, which rises and is incorporated with the soil, and the roots of our crop extend low enough to find the other elements, which would otherwise slowly pass downwards by solution in water.

Clay, or alumina, has a strong attraction or affinity for ammonia, which it absorbs from the manure and even from the air, and retains for the use of vegetation.

Hence upon a clay soil, manure, though covered but lightly, will not lose its ammonia, and the parts which naturally sink are better protected near the surface.

Formerly my own practice was to plow all manure into the soil, as deep as possible, but if it be fine enough not to obstruct the convenient tillage of my crops, I, in general, now prefer to keep it near the surface. In laying swamps, and clay lands to grass in autum, I prefer to use fine compost manure, and to apply it to the surface, merely harrowing it in.

Composting.

As to *Composting*,—this depends on circumstances. For market gardening, much of the manure must be fine, or it will render a proper culture of the soil about the young plants, impossible, and so, in all cases, where it is desirable to produce an immediate effect, manure finely divided, and thoroughly decomposed, furnishes more ready food for the plant. Again, highly concentrated manures like night-soil, require to be finely divided or composted, that they may not prove too powerful and that they may be equally diffused. Where top-dressing is used, it is an extravagant waste to apply fresh manure, because the most valuable portion of it passes off into the air, whereas if thoroughly mixed with clay or swamp mud, charcoal, or anything else which will retain the ammonia, the loss will be slight.

Again, where we have swamp-mud which contains in itself elements of fertility, in a form which needs but the addition usually of this very substance, *ammonia*, which is always endeavouring to escape, to render it a valuable manure, we make a double gain by mixing it with the manure because we save the ammonia which would otherwise escape, and we convert the mud itself into a valuable fertilizer, if the mud can be added daily or weekly to the accumlating heap in the barn cellar, this is perhaps the best use of it. The less a manure heap is handled over, in the open air, especially in windy days in Spring, the more of its value is retained.

Deep Plowing.

The *Depth of our Plowing* is another question, which must depend on many circumstances. I plow all my own land from eight to twelve inches deep. Much of it is sandy, and I manure heavily. The deeper such land is plowed, the better it will stand the drought, because the roots will strike the deeper, and on light soils, however much the manure may be diffused, the roots of the plant are sure to pursue and find it. On my heavy clay soil, in turning over the sod after haying —say once in half a dozen years—to exterminate the bad grasses and briars, which

spring up after a few years, I am suspicious that I have usually plowed deeper than is profitable. In my next experiment, for which I am preparing a large compost heap of night soil and swamp mud, I propose to run the plow to the depth of about eight inches, apply the compost, harrow it well, and sow my seed in August, or early in September. On such land, which has a strong affinity for ammonia, there will be little loss by evaporation, and the young grass roots will find their food at hand for a start. In after life, much of their nourishment is derived from the air and water; and the heavier portions of the manure they will have time to seize upon, before it washes below their reach. For several years. I have used the sod and subsoil plow, and run it a foot deep, for my hoed crops; but upon a stiff clay, which had been plowed but five or six inches before, I should deem such an operation dangerous. A deep soil is desirable everywhere, but it must be deepened gradually, unless bountifully manured. In our rocky soil, it is often impossible to plow more than eight inches, though I believe it is well established that a *granite* subsoil, taken even from the bottom of a well, will become fertile merely by exposure to the air, so that on such soils, we have little danger to apprehend from deep cultivation.

Plowing Orchards.

Shall I Plow my Orchard deep? is a question often asked. My answer would be, plow it as deep as possible, and subsoil it before your trees are planted. After that, plow as deep as practicable, without cutting the roots of the trees. As they extend through the soil, plow more shoal, so as not to disturb them. I have no doubt trees are often injured, by this violent kind of root pruning. There are "circumstances" to be regarded as to the treatment of apple trees. On the old homestead at Chester, on the firm granite subsoil, an apple tree takes a hold of the earth that the elements themselves cannot unloose. The wind may break down the tree, but it cannot uproot it. On our sandy land in Exeter, it is no uncomm thing to see a thrifty tree so loaded with apples, as to actually be weighed down, and its roots drawn from their bed, on one side. The root, in a deep fine soil, with no surer foundation than sand for twenty feet below, can find nothing of sufficient substance to which to attach itself. Now in the first case, the earth may be kept as light as possible by frequent forking, and deep tillage. In the latter case, the soil is fine and porous enough, without artificial aid, and if manure be applied, and merely covered, and the land be occasionally laid to grass for a year or two, *provided it be kept always rich*, the trees will be the better for the treatment.

General *Rules* for the treatment of all soils, cannot be given. General *Principles*, to be applied by the aid of common sense, may be learned by all who seek for them in the proper direction. Until the distinction between rules and principles is better understood, we shall continue to have those, whom even braying in a mortar will not cure of braying in another sense, complaining that the teachings of scientific agriculturists are inconsistent.

—:o:—

The Farmer's Home.

A great deal has been said about the farmer's home; as to what in many cases it is, and what in all cases it should be. And much has been said eminently to the purpose, though not all. For example; when the attention has been called solely to the farmer's physical comfort; when he has been exhorted to build a more elegant house, finer barns and fences and the like, the advice has been well-meant and perhaps judicious, but something more and better than this should have been ssid.

The first step towards improving the farmer's home, should be taken in the work of self-culture. At least this culture should go hand-in-hand with all external improvements. In most cases—not all—if his home looks badly, it is simply because he chooses to have it look so; it is the true expression of his character and tastes. Those unhinged gates and doors and shutters point to an unhinged owner. That mossy roof and tottering chimney, those weather-stained clapboards and dilapidated fences, speak of a proprietor who is himself out of repair. What good would it do to present such a man with a new and tasteful cottage, furnished within and without with all manner of elegance? It would not harmonize at all with his character; he would not feel at home within it; and if he did not either burn it up or run away from it, he would soon reduce it to the level of his old house,—the level of his character.

To improve the homes of such farmers, then, we would say, first of all, improve the man himself. Let him cultivate his mind by careful reading and observation. If possible, let him acquire a scientific knowledge of all the details of husbandry; the chemical composition of the soils he works upon; the action of different manures, and of light, heat and moisture in promoting all vegetable growths, from the elm and pine in his forest to the fruit-trees in his orchard, the grain in his fields, and the esculents and flowers in his garden. The more secure his mental discipline and the wider his range of study in all the departments of knowledge, the better. Nor should he be satisfied with acquiring stores of learning. His taste for the fit and beautiful, his social and domestic affections, and his moral and religious character should all be cultivated in due proportion. The elements should be.

> "So mixed in him that Nature might stand up
> And say to all the world—*This is a* MAN!"

When he has improved himself to the extent of his ability, or is fairly in the way of doing so, a firm foundation is laid for an improved home. Re-model, now, the house he lives in, if needful, or build a new one, and the dwelling and its occupants will harmonize with each other. The house will seem like an out-growth an expression of himself, the fit habitation of such a character.

And why should not the farmer's dwelling be neat and tasteful? It is too often the case that his thoughts are so engrossed with his crops, his barns and his stock, that his house and the many little comforts and elegancies which go to make home attractive, are neglected. The kitchen is a very important palce in domestic economy; and, where circumstances render it necessary, it will hurt no one very badly to live there. But it is highly important that the farmer should have another room in his house, for a family sitting-room, where parents and children can spend most of their time when not engaged in labor. This, and not the kitchen or parlor, should be the center of home. Here, let the industrious man come at the close of the day, and, having laid aside his soiled clothes and boots, and donned easy gown and slippers, spend the evening with his family in reading and conversation. This room may be made very pleasant. Here should stand the musical instrument—if the wife or daughter has one—and not in the stiff, cold parlor. A few pictures should grace the walls; easy chairs and a lounge would suggest comfort, and a well-filled book-case provide means for whiling away leisure moments or for profitable study. And so far as it may be, the other rooms of the house should be made attractive. There should be no sham gentility, no aping of city fashions in the style of architecture of furniture; but simplicity, neatness, order and good taste should reign from one end of the house to the other.

And what shall we say of that part of the farmer's home which lies out of doors? Much, we should like to say. In place of the usual "front-yard," shut in by high white fences, and crowded with trees and starving lilac-bushes and coarse grass, we would suggest that a small semi-circular plat of ground be laid off on two or three sides of the house, and be surrounded with a low paling or hedge. This should be planted with ornamental trees, deciduous and ever-greens, and a few flower-beds should be trailed over the porch, and roses and flowering shrubs planted under the windows. Outside of this little lawn, and immediately surrounding the house, let several acres* of land be devoted to an ornamental field or park. Let it be in hay. Let it be a hay-field, for the hay from this land will be just as sweet and profitable as from any other part of the farm. Carefully preserve any trees that may be stand upon this land, and add to their number, from year to year, as opportunity may permit. Set some together in groups and others singly, and the field will soon take on a park-like aspect. After the hay-crop is gathered, cattle or sheep may be allowed to graze upon it.

Look now, at the rural picture we have drawn: A plain, substantial house spreads out and rests, as if in repose, upon an open lawn adorned with trees and flowers. Within, neatness, order, intelligence and refined simplicity reign. In the garden without, children are running to and fro, dressing it and enjoying its beauty. Around this ornamental plat stretches a beautiful park, with scattered trees and enlivened with grazing herds. Beyond and around this, are fields devoted to various crops, which show that the hand of intelligence and industry tills them.

Why may not such pictures be often seen? Why must we go to Europe, or to the residences of a few wealthy land-owners in our own country, in order to see them? Very many of our farmers can and should have such homes. They would give the farmer a higher standing in the community, for intelligence, large-mindedness and independence; they would tend to make his family contented and happy; would attach his children to the calling in which they were born, and would win many men from other and more harassing occupations to the peaceful pursuits of agriculture. A. D. G.—*Country Gentleman.*

* "Five to ten acres," says the late editor of the *Horticulturist*, from whom we derive our suggestions.

Agricultural Report for June.

The month of June, from the first week, has been excessively dry, and very frequently high winds, which has had rather an unfavourable influence upon some of the meadows and pastures, upon late sown wheat, and upon green crops. Some of the meadows and pastures have suffered more by drought up to this time, than I ever recollect them to have done in the month of June, since 1826. I have seen meadows that promised fairly at the commencement of the month, that are now completely dried up. When the moisture is exhausted in the surface, pasture and meadow very soon wither, and do not recover until there is a considerable fall of rain. Early sown grain looks very well, where justice has been done to the soil, and barley is fast coming into ear, but the late sown wheat cannot make much progress during the very dry weather we have had from the middle of June. I do not know how far this drought has extended, and my observations refer only to the District of Montreal. The necessity which exists for sowing wheat late, in order to escape the fly, limits the period in which it has to come to maturity, and, therefore, any check to its progress in the commencement, acts unfavourably unless the month of September is warm and very fine. Wheat was sown upon this farm the 18th of April, but the month of May was so cold it was unfavourable to its progress, and it is not yet in ear, except in a small portion, that was more sheltered and fertile than the remainder, and ears were shot out on that part on the 24th of the month. This circumstance convinces me that if wheat could be sown about the middle of April, on well prepared soil, in ordinary seasons, it would be in ear before the end of June, and previous to the appearance of the fly,—which I have not seen yet this year, though I have looked for it. It is greatly to be regretted, that the season of spring is nearly over before wheat can be safely sown, and it frequently happens that the land is not then in the best state of preparation for sowing. Where the soil has been full of grass and weeds, when ploughed in the fall, they commence growing before the wheat is sown, and hence are always in advance of the crops. It is impossible to speculate at this early season, what the result of the crops may be, but there is not any ground at present to anticipate any other than favourable results, so far as regards barley, oats, peas, and potatoes. Wheat, hay, and grain crops, I cannot report of with any degree of certainty under present circumstances, as the wheat was sown very late, and the weather is now so dry, that in general, it cannot act otherwise than unfavourably upon meadows and green crops, unless we have rain soon. Caterpillers and other vermin injurious to agriculture, orchards, and gardens, have prevailed to a great extent this year, and mangold wurtzel, carrots and turnips cultivated in the field, have suffered severely. This is always the case in very dry weather, because the progress of the plants is not rapid, nor their growth sufficiently vigorous to resist the ravages of vermin. The orchards and many of the forest trees have been completely stripped of their leaves, and this is in many places a great disfigurement to the beauty of the landscape. Weeds prevail to a great extent on some farms, and from my own experience, I know, that top-dressing with town manure, before it has sufficiently fermented to destroy the vitality of all seeds of weeds that may be in it, will be certain to produce a most injurious crop of weeds, that cannot be readily got out of the land, unless by careful and expensive cultivation. The injury to meadows by the action of frost in winter, and drought in summer for the last two years, has greatly encouraged the growth of weeds, that have grown when the roots of the cultivated grasses were destroyed, and I now perceive, as I anticipated last year, that meadows so injured, will have to be ploughed up, go through a regular course of tillage, and thorough cleaning and be again seeded-down, before they will produce a good and profitable crop of hay.

Since the foregoing was written we have had at the end of the month thunder storms, and a considerable fall of rain, which cannot fail to act very beneficially upon the growing crops.

WM. EVANS.

Cote St. Paul, June 30th, 1856.

———:o:———

WHEAT CULTURE IN MAINE.

MR. EDITOR:—Much has been said against this State as a wheat growing State, and the idea is becoming quite prevalent among many farmers that wheat cannot be profitably cultivated here. The farmers here contend that a very tenacious soil is required for the production of this grain, and consequently you see but very little wheat growing on light loams. Now that a tenacious soil is not *best* adapted to the cultivation of this grain I will not dispute, but that it cannot be successfully grown on light soils, I will attempt to dispute, for on such soils I experimented the past season with good results. Two years ago I purchased a farm which consisted mostly of what was called by the neighbors *weak land*, and had been under the scientific culture of an old sea captain for twenty years previous to my purchase. The land was completely worn-out and exhausted from the fact that it never had been half cultivated. The land was very light but not sandy, and the captain said he could grow anything but wheat, and that would not pay in this State. The first year I put in a piece of wheat with very poor success, raising eight bushels from near an acre. The second year I had two acres of old ground which had never been manured. On this I carted near one hundred cartloads of swamp muck in the fall, distributing it in small heaps over the field. In the spring I spread it and plowed it in and sowed wheat. The spring was cold and backward, and from some cause it did not all germinate. After it came up I sowed on twenty bushels of refuse lime and as many more of ashes, the effect of which was soon perceivable. When it was ready to harvest, some of the straw was more than five feet high. I reaped it and it threshed out forty bushels, at the rate of twenty bushels to the acre. I think all light soils can be renovated by applying muck, ashes and lime, so that wheat, as well as other grains, will grow.—*For the New England Farmer.*

———:o:———

MAKING SUPERPHOSPHATE.—1. In making superphosphate, the smaller the bones are broken or ground the better; as much warm water is then poured over them as they will take up; and to every 2 lbs. of dry bones, pour in 1 lb. vitriol, and keep the mass well and frequently stirred in the vessel they may be put into to digest. which may be of wood or stone, or a bricked up tank; in a few days the bones will be suficiently broken down, when the pasty mass should be dried by mixing as much dry earth, ashes, saw dust, &c., as will make it dry enough for distribution. If you have no vessel, it may be managed on a common floor, if under cover so much the better; after the bones are well mixed as above with water and vitriol, make into a heap like mortar, and cover it up close with the drying materials; in a week the whole may be mixed up together, when it will be fit for use. It takes about 3 or 4 bushels of dry bones, according as they are well or ill dissolved, to the Irish acre, along with half the usual quanty of fam-yard manure, for carrots, mangels, or other green crops. The better the bones are ground, the shorter the time they will be digesting before fit for use, but half their weight of vitriol is always necessary, otherwise the quantity of soluble phosphate necessary for the feeding of the plants cannot be formed.—*Irish Farmers Gazette.*

———:o:———

EXPERIMENTS WITH POTATOES.

MR. EDITOR:—I wish to give you the results of some experiments that I have tried in planting potatoes. I planted five rows, eight hills in a row; one row was large potatoes cut, two halves in a hill, yielding 44 lbs. 2 oz.; one row large, two quarters in a hill, 39 lbs. 2 oz.; one row small, two halves in a hill, 31 lbs. 2 oz.; one row small, whole, two in a hill, 30 lbs. 10 oz.; one row large, whole, one in a hill, 27 lbs. 2 oz. By this trial you will see that the large whole potatoes, with one in a hill, the heaviest; and that the two

large halves in a hill, the heaviest; and that the two small halves gave a little better yield than the two whole ones. I think, as far as this experiment goes, it gives the preference to cut potatoes for seed.—*For the New England Farmer.*

——:o:——

FROSTED PLANTS.—Thaw them gradually, and in the dark. If but a single plant, immerse it in cold water and set it under the greenhouse stage; if the whole house be frozen, put up the shutters, or throw on mats over the glass and syringe well with cold water. Plants which, under ordinary circumstances are killed by a degree of frost, can often be recovered from severe injury by this treatment.—*Horticulturist.*

——:o:——

CORRESPONDENCE.

(*To the Editor of the Agricultural Journal.*)

SIR.—I observed in a late number of your journal, that Mr. Evans was about to establish a seed store and implement warehouse, for the benefit of the Agricultural community. I think, I could suggest to you an occupation joined with it, that would pay and be of service to the consumer as well as the farmer, that is to sell the farmers' stock and provisions on a commission. It would help to drive your hucksters out of employment, and benefit the consumer as well as the farmer. If farmers go to market from a distance, they are imposed on by the huckster system in Montreal market, and the consumer has to pay him well for his trouble and in they busy season of the year it costs the farmer considerable time, and also the expence of passage to and from Montreal. This in the establishment of an agency, would be saved, but let us hear what you think of the matter,—I consider it would be warmly supported from this quarter.

I remain, &c.,
SUBSCRIBER.

Elgin, 17th May, 1856.

——:o:——

VERSES.

The flowers she hath planted
Are rich with brilliant bloom;
But alas! the hand that nursed them
Lies mould'ring in the tomb.

* * * *

The wintry wind swept o'er them
With its piercing breath and chill,
But the germ of life and beauty
The earth enfolded still.

The soft warm air of springtime
Breathed o'er their lowly tomb,
Waking them from their slumbers,
And robing them in bloom.

And now the summer sunshine
Gleams o'er them clear and fair,
And the bright glowing blossoms,
Shed fragrance on the air.

So from the grave's dark prison
Shall she who loved them rise,
When the archangel's trumpet
Sounds through the boundless skies.

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

30th May, 1856.

Hay from 7 to $9 per 100 bundles.
Straw from 2 to $3. do.
Fresh Butter, per lb. from 1s 2d to 1s 3d.
Salt Butter, do from 9d to 10d.
Country Cheese, from 6d to 8d.
Wheat, 6s to 6s 6d.
Barley, 4s to 4s 6d.
Rye, none.
Oats, from 1s 3d to 1s 6d.
Yellow Indian Corn, from 3s to 3s 9d.
Indian Corn, (Ohio) 2s 6d to 2s 9d.
Buckwheat, from 2s 6d to 2s 9d.
Timothy, none.
Peas, from 3s 3d to 3s 6d.
Beef, per 100 lbs, from $6 to 9.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 8d.
Veal, 7d to 7½d.
Eggs, 8d to 9d.

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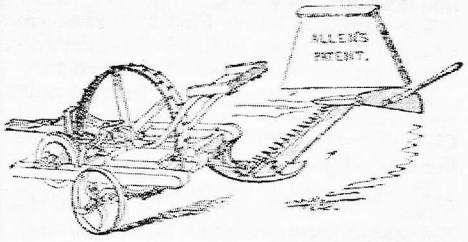
Plows, Cultivators, Horse-Hoes, Rollers, Seed Sowers, Horse Rakes, Mowers & Reapers, (*of every make.*) Threshers, Fan Mills, Horse Powers, Hay Presses, Corn Mills, Corn Shellers, Hay Cutters, Cider Mills, Churns, Pumps, &c., &c.

☞*A full Catalogue of over One Hundred pages sent by mail on application.*



ALLEN'S

PATENT IMPROVED

MOWING MACHINE,

AND COMBINED

MOWER AND REAPER;

Strong, Simple in Construction, Not liable to get out of order,

COMPACT, LIGHT, EASY OF DRAFT,

Perfectly safe to the Driver

And may be worked at a Slow Gait by Horses or Oxen,

NO CLOGGING OF KNIVES,

Works well on rough ground, also on side hills—salt and fresh meadows—and in any kind of lodged grass and clover.

WARRANTED TO GIVE ENTIRE SATISFACTION,

MANUFACTURED AT

The Agricultural Implement Manufactory and for sale at the Warehouse of

R. L. ALLEN, 189 & 191 WATER STREET, NEW YORK.

The Mower will cut and spread from ten to fifteen acres of grass per day, in a workmanlike manner, with a good pair of horses.

The Reaper will cut from twelve to eighteen acres of grain per day, with a good pair of horses. 3 p

1856.

THE COUNTY OF MONTREAL Agricultural Society,

OFFERS the following Premiums for the following Crops:

ENGLISH CLASS.

		Shillings.				
Potatoes, 6 Prems.	50	45	40	35	30	25
Carrots, 5 do.		40	35	30	25	20
Mangol Wurtzel, 5 do.		40	35	30	25	20
Turnips, 3 do.				30	25	20
Indian Corn, 6 do.	40	35	30	25	20	15
Horse Beans, 3 do.				30	25	20
Summer Fallow, 2 do.					30	20

For General Competition.

The Best Surface Drained Farm, 2 premiums,					30	20

RULES AND REGULATIONS.

A Field of Four Arpents, at least, will be required to entitle a Farmer in this Class to compete for Potatoes and Summer Fallow.

One arpent for Indian Corn.

One arpent for Beans.

Half an arpent for Turnips, Carrots, Mangol Wurtzel, the whole to be Field Culture.

No person allowed to compete unless a Member of the Society.

No Premium to be given unless Farm is free from noxious weeds.

The parties to whom First Premiums are awarded, shall report to the Society, the system adopted in the production of the crops.

That such Premiums shall be paid only upon Interrogatories being answered, and Circulars returned filled up, addressed to the Secretary-Treasurer.

This Rule will be enforced strictly.

Notice of Competition to be give to the Secretary-Treasurer on or before the 20th July next.

By Order,
JAMES SMITH, Sec.-Treas.

Montreal, 1st May, 1856.

Lower Canada Agricultural Implement Warehouse

AND

SEED STORE,

St. Ann's Hall, over the St. Ann's Market.

THE SUBSCRIBER has just received from FRANCE, a considerable quantity of FIELD, GARDEN and FLOWER SEEDS, amongst which will be found several kinds of CLOVER and other SEEDS never before introduced into this country. He has also on hand every variety of SEED GRAIN, all of which will be found pure and unmixed.

The IMPLEMENT BRANCH will comprise every thing necessary for the Farm, Garden, and Dairy.

The Subscriber would also intimate that he has been appointed Agent in this district for the extensive manufacturing house, known as the "Faris Furnace Co." of Clayville, New York. And has now on hand a considerable quantity of their Agricultural Implements, they are of superior quality, and will be disposed of by wholesale and retail on liberal terms.

WM. EVANS, Junr.

Genuine Peruvian Guano and other Fertilizers.

Seeds and Fertilizers.

AGRICULTURAL IMPLEMENTS.

GENUINE PERUVIAN GUANO, Bone Dust, Superphosphate of Lime, Plaster, and Pudrette.

SEEDS—Grass, Clover, Wheat, Oats, Barley, Corn, and all other Field, Flower and Garden Seeds—WARRANTED PURE.

PLOUGHS, Harrows, Seed Sowers, Rollers, Threshers, Horse Powers, and every description of Agricultural and Horticultural Implements—the largest assortment in the United States.

Allen's Patent Mowing and Reaping Machines,
and all other approved makers.

E. L. ALLEN,
3 p 189 and 191 Water Street, New York.

Notice to Farmers.

THE MUTUAL FIRE INSURANCE COMPANY of the COUNTY OF MONTREAL, insures the properties of farmers in Lower Canada, at 5s. for £100 currency, for 3 years, &c.

Apply at the office, *St. Sacrament Street*, Montreal; to the Agents in the Country; or to the undersigned Directors:—

Wm. Macdonald,	Esq.,	President, Lachine.
B. H. LeMoine,	"	Montreal.
Edward Quin,	"	Longue Pointe.
F. M. Valois,	"	Pointe Claire.
John Dods,	"	Petite Cote.
G. G. Gaucher,	"	Ste. Genevieve.
Frs. Quenneville,	"	St. Laurent.
Joseph Laporte,	"	Pointe-aux-Trembles.

P. L. LE TOURNEUX,
Secretary and Treasurer.

Montreal, 1st July, 1854.

Montreal Savings Bank.

A PERIOD OF THIRTY-SIX YEARS HAS elapsed since an association was formed in this City, under the designation of the "MONTREAL SAVINGS BANK," with the view of affording to the community the important benefits arising from such Institutions.

The undersigned, the only surviving acting parties connected with the Bank, anxious to be relieved of its management, and at the same time desirous that the public should not be deprived of the advantages which it has conferred, have EFFECTED AN ARRANGEMENT WITH THE BANK OF MONTREAL, by which that Institution has become responsible to Depositors for the balances due to them and will receive Deposits in the same manner as the Montreal Savings Bank has hitherto done.

The undersigned have every confidence that this arrangement will be satisfactory to the Depositors and also to the community.

S. GERRARD, *President.*
J. FROTHINGHAM, *V. P.*
J. T. BARRET.

Montreal, March 29th, 1856.

The Savings Bank Department

OF THE

BANK OF MONTREAL

WILL be OPEN DAILY, between the hours of TEN and THREE, under the immediate charge of HENRY VENNOR, Esq.

By Order.
D. DAVIDSON,
Cashier.

Montreal, 30st March, 1856.

Paper, Account Books, &c.

FROM the different Vessels now in Port, the Subscriber has received a large portion of his importation of WRITING, WRAPPING and DRAWING PAPERS,—ALSO—of ACCOUNT BOOKS in very great variety.

Printing and Bookbinding

CARRIED on as usual in all their departments.

H. RAMSAY,
Montreal. 37, *St. Francois Xavier St.*

Printing in both Languages

FOR AGRICULTURAL SOCIETIES, furnished with the greatest expedition and on the most moderate terms. H. RAMSAY.

School Books.

WHOLESALE WAREHOUSE,
St. François Xavier Street, Montreal.

THE Subscriber has always on hand, ample stocks of the following approved Text Books:—

THE NATIONAL SERIES, (prize editions), on fine paper, and substantially bound.
PRIMERS of all kinds.
SPELLING BOOKS—Mavors, Carpenters, Websters, Butters, &c.
GRAMMARS—Lennie's, Murray's large and small, Kirkham's, Cobbett's, M'Culloch's, Reid's, Chamber's, Arnold's, &c. &c.
ARITHMETICS—Thomson's (British edition), National 1st and 2nd, Walkinghame, Ingram's, Gray, Melrose, Trotter's, Bonnycastle, Chambers', Table Books, Arithmetical Tables by Butler.
BOOK-KEEPING — Hutton's, Morrison's, National, Chambers', &c.
READERS — English Reader, McCulloch's Course and Series of Lessons, Ewing's Elocution, Reid's English Composition, Chambers' Composition, Whatley's Logic and Rhetoric, Blair's Lectures, &c.
DICTIONARIES — Walker's, Reid's, Fulton's, Johnson's, Webster's, Buchanan's Technological, &c.
GEOGRAPHY—Gibson's Geography of Canada (just published) Morse's, the National, Geography Generalised, Goldsmith, Stewart's, Ewing's, Reid's, Olney's, &c.
ATLASSES—Johnson's New General, Physical and Classical—Johnson's National, Ewing's, Chamber's, Parley's, Quarter Dollar Atlas, Scripture Atlas (price 4d.)
SCHOOL ROOM MAPS—including a large and clearly defined one of CANADA just published.
TERRESTRIAL and CELESTIAL GLOBES —12 inch.
HISTORIES—Roy's Canada—new edition, 2s,—Histoire du Canada, 2s, Rome, 2s, England, 2s, Simpson's England, Rome, Greece,—Pinnock's do. do. and do,—Keightley's do, do, and do,—White's Great Britain, England, France, Sacred, Universal and Outlines, Tytler's Elements, Magnall's, Questions, &c.
FRENCH, ITALIAN, GERMAN, LATIN, and GREEK TEXT BOOKS used in the principal Colleges and Schools.
SCHOOL REQUISITES in great variety, including Copy-books, Slates, Paper, Account Books, Drawing Pencils and Paper, Mathematical Instruments, Reeves' Colours, &c. &c.

H. RAMSAY.

Montreal: Printed and Published by H. Ramsay, No. 37, St. François Xavier Street.

The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 4, Montreal, August, 1856. **POSTAGE FREE.** **Price 2s 6d per annum, in advance.**

The Farmer's Journal.

Dear Labour and Cheap Land versus Improved Farming.—*(Continued.)*

In returning to this subject, we feel that we are arriving at the most difficult part of it; for it is easy to point out evils, hard to remove them. The evils with which we have now to do are also, so to speak, native to the country, and in some degree inseparable from its circumstances. Hence we have no sympathy with those who rail at or ridicule our farms and farmers, without considering the force of circumstances, and the difficulty of making these bend to the requirements of a system.

On the other hand we have just as little sympathy with that listless carelessness which puts up contentedly with defects that can be remedied, or with the desponding of those who make a single failure in the attempt to improve, a ground for condemning the soil, the climate, or the social condition of a great and growing country. We hold that Canadian agriculture is just in that condition in which the circumstances in which it originated and has been carried on, would lead us to expect to find it; and that what remains to be done is to apply sound judgment, scientific knowledge and practical skill to the removal of present defects, and to the introduction of improved practice.

Illustrations of practical improvements are of more value than general reasoning; and let us refer, first, to ways in which time and labour may be directly saved, so that the short seed time of this climate may be improved, and the dear labour turned to the best account. One of the most important points bearing on this is the best possible provision for the mechanical work of the farm. This subject has received and is receiving very great attention even in the older countries, where labour is cheap—witness the importance attached to agricultural implements in the great exhibitions at London and Paris. Our neighbours of the United States have been stimulated, by their position in relation to climate and labour, to still greater activity in this direction, and they have been most successful. A curious illustration of the importance of attention to this subject, is furnished by the result of the trials of ploughs at the recent Parisian exhibition, where it appeared that the resistance, and consequent difficulty of draught, in different improved ploughs varied from 4 to 11, an immense practical difference in so far as the labour of men and horses is concerned. Then in addition to the mere ease of draught, different ploughs differ materially in the certainty and accuracy of their work, in their effects on the soil, and in their suitableness to various soils. Then, in addition to the common plough, there are subsoil, and drilling, and side-hill ploughs, &c., various forms of harrows, of cultivators, of seed sowers, corn-planters, &c., all claiming the farmer's attention; and it is decidedly his interest to furnish himself with those which in any important degree economise time and labour.

Another aspect of this part of the subject, relates to the convenient arrangement of farm buildings, accessibility of water, judicious division of fields in relation to exposure, dryness, &c., and facility for securing the crops, and provision for the safe keeping of implements and for their speedy repair when injured. Still another aspect leads us to think of draining, whereby land can be earlier and more uniformly worked, of good farm roads, facilitating the carting of manure, &c., of hedges and other permanent fences not likely to call away the attention of the farmer from important work in hurried seasons.

The best working animals should also be secured if possible, and should be so trained and kept as to be ready for work when wanted, and to do it in the best way. It is surprising that considerations of this kind have not long since diminished the use of the ox as a labouring animal. We are quite aware of the virtues of the sturdy patient ox, and of his value to the lumberer and new settler, but that our go-ahead young farmers, on both sides of the line of 45°, should be content to trudge behind a pair of oxen at a snail's pace, perhaps doing in a day not more than two thirds of the work that could be effected with a pair of active well trained horses, has always puzzled us. We believe that a fair calculation of the value of the work ox for beef, and his easier keep, against his slow pace, would show that farmers are losers by employing this kind of labour.

We have noticed but a few particulars deserving attention, in the attempt directly to save time and labour. In a future number we may speak of ways to make labour produce the greatest results.

The advertisement in another column from the Minister of Agriculture should attract the attention of all desirous of obtaining land. The Government has opened up by good roads a fine tract of wild land and offers it to settlers free of charge, provided that they choose to become permanent residents, and to fulfil the moderate ettlement duties.

We should think that there are thousands of young men in the seigniories and townships of Lower Canada who would be glad of such an opportunity of acquiring a farm.

——:o:——

We have applied for but have not yet obtained a copy of the Agricultural Act, passed last Session of Parliament. We hope to be able to lay it before our readers next month.

——:o:——

AGRICULTURAL FAIRS.—The Provinvincial and State for 1856 will be held as follows:—Canada East, at Three Rivers, Sept. 17, 18 and 19th; Canada West, at Kingston, Sept. 23, 24, 25, and 26th; Illinois, Sept. 30, Oct. 1, 2, 3; Indiana, at Indianapolis, Oct. 20, 21, 22, 23, 24, 25; Maine, Oct. 28, 29, 30, 31; Michigan, at Detriot, Sept. 30, Oct. 1, 2, 3; New Hampshire, Oct. 8, 9, 10; New York, at Watertown, Sept. 30, Oct. 1, 2, 3; North Carolina, at Raleigh, Oct. 14, 15, 16, 17; Ohio, at Cleveland, Sept. 23, 24, 25 26; the United States Agricultural Society at Philadelphia, Oct. 7, 8, 9, 10; and the American Pomological Society, at Rochester, Sept. 24.—*Spectator*.

——:o:——

New Books.

Third Annual Report of the Secretary of the Massachusetts Board of Agriculture.

This large Pamphlet contains as usual, in addition to local statistics much useful matter of a general character. In the present Report, the subject chiefly adverted to is the improvement of Agricultural Machines, and much information is given on all the new improved forms of Ploughs, Harrows, Cultivators, Rakes, Reaping Machines, &c., which cannot fail to be useful to any one desirous of introducing those implements on his farm in their best forms. On the importance of this department of agricultural improvement, the writer remarks:

"Probably the introduction of improved farm implements into general use would lend a more efficient aid to the progress of practical agriculture than all the books that could be written on farming. Books disseminate ideas. Implements successfully operated prove these ideas to be of practical value, thus preparing the minds of men to give a favorable reception to other ideas, when presented to them. Besides this, they are highly beneficial, but in their immediate effects and in the new ideas of improvement they suggest by their use.

The progress of agriculture may be measured by the increased call for new and better farm implements, as the advance of civilization in a community is shown by the greater demand for comforts and luxuries among its members.

There was a time in the history of American farming when labor was cheap, when strong limbs and the power of endurance were the only things sought for in the "hired man," and when this labor was paid for chiefly as so much brute physical force. Intelligent labor, skill and thought found higher rewards in other callings, and the practical farmer was thought to be sufficiently well educated if he was able to hold a plough, to mow, to sow and to reap. The labor, the physical force, necessary to carry on the operations of the farm, could be easily obtained in those days, and it was very natural that farmers should not then be able to see the need of any great variety of implements for the performance of their daily work.

But there is a very different state of things now. In many parts of the country it is very difficult to procure labour, and everywhere its price is far higher than it was even a few years ago. It is almost impossible to procure intelligent labor at any price. These facts have arrested the attention of farmers of all classes, and the prejudices in favor of established practices and old implements are fast giving way.

The highest mechanical skill is taxed to the utmost to supply the place of hand labor by machinery, and the time cannot be far distant when we shall avail ourselves of all the labor-saving implements now in use in other countries, with many of our own inventions, to meet the wants of American farmers. Efforts in this direction have already enabled the farmer to increase his crops very largely, while depending much less than formerly on manual labor. In the meantime farming has become more and more attractive to the young, and men of intelligence have turned their attention to it without fear of finding it a mere mechanical drudgery. They recognize it as a pursuit full of pleasure, and as opening a field for the exercise of the highest skill, where human genius has some of its grandest triumphs to achieve."

We would gladly extract many portions of this Report, could we copy the excellent cuts of implements by which the descriptions are illustrated. Possibly at a future time we may be able to do this.

——:o:——

NEW AGRICULTURAL SOCIETY.—At a meeting of the inhabitants of the townships of Durham, Kingsey, Simpson and part of Wickham, held at Durham, on the 8th of July, 1856, for the purpose of organising an Agricultural Society to be called the Agricultural Society No. 2 of the County of Drummond, G. S. H. Brown, Esq., of Kingsey, was appointed chairman, and James Bothwell, Esq., of Durham, requested to act as secretary. The object of the meeting being to form a new society under the provisions of the Agricultural Societies' Act passed during the last session of Parliament, 78 members were enrolled, and the Society proceeded to the election of its officers for the present year as follows:—G. S. H. Brown, of Kingsey, President; Benj-Reed, of Durham, Vice-President; J. B. E. Dorion, of L'Avenir, Secretary-Treasurer; and Edward Conoly, Wickham; John Trenholm, Kingsey; Edward Brown, Simpson; H. S. Griffin, L'Avenir; Bernard Smith, Durham; John Royston, do; Jas. Bothwell do; Directors. The Directors having resolved to enrol new members in their respective localities, and to meet on the 17th instant, and thanks being voted to the President, the meeting broke up.

——:o:——

Mowing Machines.

Sir,— In your issue of the 8th instant, a correspondent "W," says, he "regrets to observe the terms in which you noticed the trial of Mowing Machines held on Logan's Farm, on the 4th instant." He further states there is no reason to speak of the Machine tried as "inferior." And the *Transcript* of Friday also alludes to your notice of it, and requests you will be present to-day at a trial of a Hussey Machine, on on the same farm.

I think you are perfectly justified in your comments, and those who require reaping machines will yet thank you for them. I was pressnt and assisted at the experiments made in Europe, by the makers of the American, English, and French machines, and I furnish you with the report made by E. Denison, Esq., M. P., for the English Government, in reference to these trials, a portion which it may be of advantage to copy.

The Dray Machine is one made under Hussey's Patent.

In writing to you, I have but one object in view, and that is to caution our farmers from too hastily introducing an inferior article, when a better can be had at the same expence; and it is the bounden duty of our Agricultural Societies to see to it. They are annually drawing large sums of money from the Government for the purpose of improving our agriculture, and there is no object to which a few pounds could be better applied than to the introduction of the better kinds of implements into the country. There are trials of implements under the auspices of societies in England and France now, and draught there is considered an important matter. As yet we have not got that far. Perhaps in a few years more the Agricultural Board may deem it an advantage to institute these tests, and, for that purpose, to introduce the Dynamometer. Its cost is £30. Were such a machine applied to ploughs, reapers, &c., &c., theu some prac-

tical result could be arrived at, by such trials.

Yours, &c., P.

The following are the extracts referred to in P.'s letter :—

J. M. Manny (United States).—Mr. Manny's allotment consisted of 1,900 square metres, which he cut in twenty-six minutes. The machine is worked by two horses, and cuts a breadth of four feet six inches. Mr. M., speaks highly of his machine, and gives numerous testimonials of its efficiency exclusively of medals, premiums, and awards from different districts in America, and from different countries in Europe, for its performance. * * * * * It did its work, with the exception of some parts not very clean cut, moderately well, and in twenty-six minutes completed the quantity it had to perform.

M'Cormick (America).—This reaper is probably one of the best machines of its class. It reaped 1,987 square metres in seventeen minutes, and judging not only from the quantity of work done in so short a time, but from the manner in which the ground was lea'ed, and the grain cut, it evinced much greater perfection in its operations than any of the others whose powers were brought to the test. It cuts a clean track of five feet six inches wide, and performs the operations with a degree of certainty and precision sufficient to account for the very short time in which the allotment was cut down.

W. M. Dray & Co.'s Machine (English) is of an exceedingly compact form. It is entirely without a reel for gathering in the corn to the cutters, and requires only one man as a reaper to watch the cutters and discharge the corn as it is received upon the board or wooden platform behind. The cutters are five feet wide, and it reaped, 2,250 square metres in 3' minutes. [Some say 34 minutes.] The peculiar features of this machine are, its portable construction and the receiving-board, which moves upon an axis. By the pressure of the reaper's foot the platform is tilted, and the grain drops behind, ready for the person who follows to bind and tie it up. The only objection to this process is that it requires the binding to be done immediately, otherwise the horses, at every succeeding cut, would trample over the previous reaped corn, and, moreover, would effectually impede the working of this machine. Under these circumstances the track previously cut must be entirely cleared in order to prepare for that which succeeds. This operation of the tilting board, which throws the grain upon the track behind, appears to be the chief defect in the machine. A different clearing apparatus, to effect the discharge of the cut grain in a lateral direction would render this machine more valuable. It would give time for binding up the grain into sheaves, and at the same time it would clear the track for the horses and machine on their return for the next cut.

	Breadth of cutting.	Square metres.	Time.	No. of horses.	Price £
Manny, American*.	4	6	1.900	26	2 26
M'Cormick, do ..	5	6	1'987	17	2 30
Dray, England	5	0	2,250	35	2 25

From the above table it will be seen that M'Cormick's American machines performed the most work in the least time ; that Atkin's an dManny's executed as nearly as possible the same quantity of work in the same time, there being a fraction in favor of Manny ; and that Dray was the next in the order of time and the quantity of work done.

Reducing the whole work done to a standard of 2,000 square metres, the competing machines will stand thus :—

	minutes.
M'Cormick's would cut 2,000 metres in	17.00
Manny's " "	27.36
Atkins' " "	27 69
Dray's " "	31.11

If we are, therefore, to take the quantity of grain cut in the least time, Mr. M'Cormick's machine will stand first on the list, and the others according to their position in the above scale.

—:o:—

We extract the following from an interesting account of a visit to a great American sheep farm, by the editor of the *Country Gentleman* :—

If Mr. Chamberlain's barns, are about 400 in number, including perhaps 100 lambs of from one to five months old,—the whole nearly equally divided between the Silesian and French breeds. Of the *French* Merinos, the first importation was made in 1851, when 86 ewes and 3 bucks were brought over. Two other lots of about 30 each, including both sexes, were procured in 1853 and '54. But as some inconvenience almost invariably results, where more than one kind is bred, Mr. C. intends disposing of the French at an early day, we believe, and devoting his attention to the Silesians entirely.

The first importation of the *Silesian* Merinos occurred in May 1851, and consisted of 40 ewes and 15 bucks. Another lot, of 31 in all, was brought over in September, 1853 ; a third of 124, partly in May and partly in September, 1854, and, lastly, thirty-four ewes and two rams, had just arrived the preceding week, under the care of CARL, for several years Mr. Chamberlain's shepherd, who had been entrusted with their selection and purchase. All these importations were procured directly or indirectly from the flocks of Mr. FISCHER, of Werchenblatt, in Silesia ; by whose father the breed was originally obtained from Spain as long ago as 1811, since which time,—and this is a noteworthy fact—they have been bred, by father and son, *altogether without* the intermixture of any other blood. This in-and-in breeding doubtless furnishes the reason why the Silesian parent is able to mark so strongly his offspring from the common ewes of the country,—which cross, in the opinion of Mr. Campbell and others, is the best adapted for ordinary farm purposes, the lambs produced gaining greatly in fineness and value of fleece.

Where and How they are Wintered.

The cellars of Mr. Chamberlain's extensive out-buildings embrace an area of about 120 feet by 45,—a space which furnishes the most ample accommodations for his present number of sheep. They are well lit, and very warm, the walls being doubly boarded and filled in between with straw. The litter is allowed to accumulate all winter, not being removed until the sheep go out, but by the addition of straw for bedding, being kept as clean and sweet as the most fastidious could desire, while every particle of manure is preserved at the same time, and in the best manner. That the comfort and health of the flocks are also fully provided for by these means, is evidenced by the fact, that of the large number of lambs dropped through the season, from December into April, not one, born in a healthy condition, has been lost, or suffered from any subsequent cause,—while, in regard to economy, Mr. C., estimates that the food of 67 sheep without shelter, would suffice abundantly for 100 in his barns, thus effecting a saving of one-third. The sheep are taken into the yard twice daily for water and exercise.

Mr. Chaimberlain's farm embraces between four and five hundred acres, and was purchased by him 15 years ago in a very low and impoverished condition, having previously been occupied by tenants a number of years. About 25 acres of swamp lands have been reclaimed by him, and from being a decided nuisance, have now become fertile themselves, and a source of fertility for the remainder of the farm. The improvement cost him, for his want of knowledge of the best and cheapest modes, in the neighborhood of $75 per acre, but with his present experience, could have been accomplished, he thinks, at about one half the expense. But even this large outlay has been more than repaid as we shall see. He has no doubt that there are enough lands now lying waste in the one county of Dutchess, and which might be similarly reclaimed, to feed all the counties bordering upon the river !

The improvement was commenced by stone drains laid down in sufficient number to carry the water totally from the ground. The brush having next been cut away, a plow with steel point and coulter was employed to cut through the tussocks remaining, which were gathered into heaps, dried and burnt. On one portion of the land thus reclaimed, successive crops of corn have been raised for *seven* years, on another for *five* years. The latter, after this heavy cropping, was last year seeded, but the grass grown was so rank, that it was beaten down by the first storm, and made worthless for hay. The product of corn averaged during all these years, 80 bushels per acre, yielding, according to Mr. C.'s estimate, a clear profit

*Diameter of driving-wheel 2ft. 6in.; crank makes 18 to 1.

every season of $75—the full first cost of the improvement,—the corn-stalks, used as fodder, being considered an equivalent for the expense of cultivation.

The swamp now rates as the most productive ground in the country. Muck taken from it has proved an excellent dressing for uplands, good crops being obtained by its use, without any other manure. We were afterwards informed by Mr. Wainwright, that he is obliged to pay 37½ cents a-load for muck entirely similar, and of which, even at this cost, he makes extensive use.

Mr. C. derives much very valuable manure also, from his manner of wintering his sheep above described; though he has not yet carried it quite so far as they do in Germany, where the litter and manure is sometimes allowed to accumulate to a depth of four or five feet before removal. He had tried the experiment also during the past winter, with a portion of his cattle—keeping them well supplied with bedding on a *ground* floor,—and had found it certainly open to no objection on the score of *neatness*, as we are able to testify from personal observation.

Careful regard being thus paid to the home manufacture of manure, Mr. Chamberlain has been able to bring his whole farm from a very low to a high state of productiveness. Employing the beds of muck, and economizing all the accumulations from his sheep and other stock, it has never been necessary for him to go beyond his own establishment for its fertilizers; he never had used guano at all with the exception of a small lot last season for purposes of experiment,—with which, indeed, he was so well satisfied, that he has this year procured a larger quantity for further trials,—yet, in the main, his system has been that, in which, in a word, consists the true doctrine of all profitable farming, viz: *reliance upon the resources of the farm* for maintaining and increasing its fertility.

——:o:——

Indian Corn—Its Cultivation—Value of the Crop.

In our last we had something to say of the preparation of the soil, and of the manuring and planting of Indian corn.

A word on the after cultivation was promised. If the ground be prepared, as then recommended and if the hills are planted compactly and in straight lines, the after cultivation will not be difficult.

If the kind of corn is of a good size, and we see not why smaller should meet with acceptance, unless it be in cold regions with very short summers, the hills should be four feet apart each away. To plant nearer is to increase the labor without increasing the produce.

For the first dressing, let the cultivator be run both ways; and it may be set at such a width as to bring the outer tooth very near the hills, now while the roots are limited; or if the horse hoe, which is better, be used, the shares being set so as to turn the furrows inward from the rows, it may be run very near the hill, leaving the least possible work for the hoe. But what is left, do by all means, and do it neatly, not letting a weed escape, and leaving the surface level.

At the second hoeing, the cultivator may be run still nearer the rows, so as to throw the soil quite close to the hills, or a little by; and if the horse hoe is used instead of the cultivator, the shares should be so set as to throw the furrows towards the hills, the reverse of what was done before. Still less work will be left for the hoe this time, if the cultivator, or horse hoe, or the plough, which many think nearly as good as either, is skilfully used. But let what is left be done well. Let every inch of the field be left fresh and not a weed appear.

No very long time should intervene between the first and second hoeing; nor between the second and third; and the third should be finished early in July, by the tenth at furthest. We know that there is a difference of opinion among farmers as to stirring the ground among corn, after the roots have perforated the soil. Some would say, "O no, let alone; I would hire men to keep out of my corn field after the tenth of July, if I could not keep them away by other means." Others would say, "Hoe away; plough deep; keep at it; the more you stir the soil the better;" and they complain that their fields become weedy if they do not keep the soil moving till about harvest time.

To this we should incline to reply;—If you have stirred your soil as often and as thoroughly as you ought, from the first of May to the 10th of July, it will hardly need more stirring; and if you have conquered the weeds as thoroughly as you should during the summer time, they will be pretty modest afterwards. Weeds, that go to seed in August, are not those that spring from the seed after the 10th of July, but those that escaped the hoe before. That is the general rule. Corn itself is a voracious plant, almost as much so as a pig weed; and if brought forward by proper means till the 10th of July, it will do much to starve the weeds that spring up after that time.

A difference in soils may have contributed to a difference in opinion about late hoeings. It should be remembered that if you hoe late, you effect two objects, one good, the other bad; you stir the soil, and that is, good, but you mutilate the corn roots, and that is bad. Now it is possible that in some soils—those of a tenacious, clayey cast—the good effected by loosening up the soil, is more than the evil produced by a mutilation of the roots, and so the balance may be in favor of late hoeing. But the general rule is otherwise. On friable, loamy soils, such as these on the Connecticut river—as good as the world affords for growing corn, it is better to let this crop alone after the tenth of July, provided the crop is ordinarily forward. Then, if you have not done your duty by that time, it is too late; and in this case it will not do to say "Better late than never. It is worse "late than never," with corn after its roots have perforated and filled every inch of the soil. The best thing you can then do, is, to do better another year—to take first rate care of your corn till about the tenth of the seventh month, and then *let it alone*.

Before speaking of the harvesting of corn, a word about after manuring. It sometimes happens that a farmer has a pretty good field of corn, standing well, and of fair appearance, in the middle of summer, but not as luxuriant as he expected, and not giving promise of numerous and well filled ears. He becomes convinced that he was not as generous with his manure as would have been well. In short, if he had given five dollars worth of manure more, he would have received ten dollars worth of extra corn per acre. Is it too late to correct the error? As in case of having neglected to hoe his corn in time, is he to wait another year before he can do better? We think not. He may devise some economical way of destributing guano, or superphosphate of lime, dissolved in large quantities of water, over his field; and the effect of these fertilizers so applied would be almost instantaneous.

He has another resort:—The poudrettes manufactured by the Lodi Company, of New York, and by the Lieberg Company, of East Hartford, Conn., are exceedingly quickly acting manures. If a farmer is convinced, at a late hour, that he has not been sufficiently liberal with his corn field, why not cultivate in a few barrels of this cheap and excellent fertilizer, as late even as the third hoeing? We cannot doubt that it would be attended with paying results.

With regard to the harvesting of corn, there cannot be much choice between the old way of topping it in September and then cutting the hills when fully ripe, and the new way of cutting up the whole when well out of the milk. If a rye crop is to follow, the latter is the only way, or if the ground is to be seeded to grass, it is preferable. More care than is usual should be taken to cure the stalks and husks. If saved clean and sweet, and then cut in a hay cutter and steamed, and if a little corn meal be added, there is no better food for milk cows; and it is good for almost any stock.

The old practice of hilling corn—making hills as large as a two bushel basket inverted—is ridiculously foolish. The field should be nearly level after the third hoeing. Deep plowing and level cultivation is the rule. There are corn fields in our country, (what were corn-fields,) which have been pastured two hundred years, and yet the hills may be counted. They have but lasted six generations, and yet too many of us follow the example of those who made them, without inquiring why.

For more than two centuries we have cultivated Indian corn; and at our past rate of progress, it will take us two more to learn the value of it. Six hundred million

bushels, in 1850, soon to become a thousand millions, of the best food in the world for beasts, if not for man! Does the world afford a more valuable crop?—*N. Y. Commercial Register*

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Study and Care in Agriculture.

Agriculture summons more sciences to its aid than any other common pursuit. Its roots extend into almost every field of learning. It levies a simultaneous tax upon chemistry, geology, mineralogy, botany, meteorology, and upon all the arts and sciences that blend with these. It is therefore most successfully persued only when diligently and deeply studied. *Theories* of practice, without practice itself, are rife everywhere, and in almost every profession. But agriculture, as it is pursued by a majority of farmers, is *a practice without a theory* Yet nothing but great research into physical laws will develop its full capacities, which as yet are only meagerly measured and understood.

A man may plant corn in the spring, and in due season gather the crop into his barn, without having ever read a book, or even knowing the alphabet. Yet *knowledge*—and such knowledge as can be conveniently imparted only by books—is necessary to an intelligent understanding of the various influences of atmosphere, sunlight, rain and soil which operate to cause growth. Many things may be done ignorantly and yet successfully

Carefulness of cultivation will do much, but it will not compensate for want of information and intelligence. What then must be the results, in such a comprehensive occupation as the cultivation of the earth, of *careless practice without knowledge!*

The two great lacks in agriculture, as it is ordinarily practised, are requisite *information* and *carefulness*. But the most pressing and immediate deficiency is the latter, the remedy of which cannot be too strongly enforced upon the attention of farmers and cultivators everywhere. Heedfulness may take a sure step towards success; negligence walks slip-shod to poverty. —*Ind*

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Hop Vines.

"Good evening, neighbor Robbins. Take a seat."

"Good evening, sir. Pen, ink and paper before you. I often find you thus occupied. I wonder what you can find to write about, so much."

"Yes, I sometimes employ a leisure hour in this way. I was just thinking I would write something for the *Farmer*. What shall I write about?"

"Well, there are so many subjects connected with agriculture, that I should think you could readily find something to write about."

"But, my dear, sir, in the very fact that there are so many subjects, lies the difficulty. If there were but one or two subjects, one would never be at a loss what to write about. I suppose many a man has lived a bachelor all his life, because he could not make up his mind which one of the many pretty girls around him, he should select for a wife. If there had been but one or two girls in his neighborhood, he would have married long ago. Is it not so, neighbor R?"

"Perhaps there is something in your suggestion. One would not like to offend all the rest, by selecting one who is no better than they are."

"Offend the rest! Do you believe the girls are so selfish as to be offended because a man chooses one of their number for a wife? No, no! They will like him the better for thus showing a proper appreciation of the value of the sex; and, besides, when one is taken off there is a better chance for the rest. Depend upon it, sir, the girls will never be offended when a man takes a wife. But what is that which you have in your hand?"

"A peice of hop vine."

"Let me see it. Perhaps this will do for a subject to write about."

"Write about a hop vine! I think if I were going to write, I would take some juicier subject than that. That must be a little too dry."

"The virtues of plants do not all reside in their juice, neighbor. Let us see. Here is the bark or outer covering, the bitter principle, the tannin and the coloring matter, the leaves and the young shotts, of which cattle are very fond. Now let us recollect what we have heard about the uses of hop vines.

In England, they are used instead of oak bark, for tanning light skins. The red vines are said to contain the most tannin. In Sweden, the stalks are successfully converted into strong cloth for sacking and bags for holding the hops. They are gathered in autumn, and soaked in water during the winter, and after being dried on stones, are dressed like flax. A coarse kind of paper has been made from them. They are used as binders for sheaves of grain. The prunnings are cut into pieces, and stored for winter food for cattle and horses, which are very fond of them, their bitterness constituting them an excellent stomachic. The tender shoots of the hop may be used in the spring as a salad. In Flanders, the young shoots are used in the same way as asparagus. An extract is procured from the leaves and shoots that forms a dye for woollens, of a fine cinnamon color, and in France they are made to afford a permanent brown. All these uses are distinct from the hop itself, for which the plant is cultivated. Here, then, we have tannin, cloth, paper, ropes, food for cattle and men, medicine and dye-stuffs, all from the hop vine. This is not so dry a subject, after all, neighbor! And, besides, from this subject, we may gather "food for thought." How many of the products of nature consist essentially of the same elements, and may be readily substituted in practical use, the one for the other. Here is a beautiful text from which an ingenious man might write a long sermon; herein are displayed the forecast and wisdom of the Creator. When the supply for man's wants is exhausted in one form, he finds it stored up in another form, and safely preserved for his use; as a general fact, man never learns the uses of material things any sooner than he is compelled by his necessities; and, sometimes he struggles a long time under difficulties, before he finds out the proper remedies, although they exist in a undance in the commonest objects that lie thickly scattered around him.

The Indians and Mexicans used iron ore to paint their bodies, and ornament the dressed skins of animals, and all the while used axes and chisels and arrow-heads of stone, because they had not learned to separate the metal from the oxygen which had converted it into rust. Oyster shells, clam shells and bones, were an incumbrance and a nuisance until their agricultural use gave them a commercial value. When we shall invent some process by which granite can be converted into fine powder like gypsum, it will become valuable as a manure for certain oils, and then we shall be able to make apple trees thrive on clay soils, as well as on gravelly loams. Straw, certain grasses and weeds, are now becoming valuable as materials for paper, and I have recently noticed that the stalks of the broom corn are being used for this purpose. The waste of the soap maker and tanner are now valuable as manures. So in a thousand instances, substances of the most premising appearance, and of no apparent value, have become the fruitful sources by which our wants and conveniences are supplied. The fact is, neighbor, nature has created nothing in vain. When we have discovered a new and important value in some common and hitherto worthless article, we are surprised that it was never thought of before. The most necessary and useful articles are the cheapest and most abundant, the world over, and in this fact the care and benevolence of the Creator are manifested. He has furnished the raw material, and left it to the ingenuity and industry of man to convert it into such forms as shall best contribute to his advantage and comfort. But I am not going to write a sermon, and so I will stop. I thank you, neighbor, for bringing in that peice of hop vine. If it has no other use, it has served to occupy us pleasantly for half an hour. Well, I shall hang up this dry hop vine, in some conspicuous place, just to remind me that there is nothing made in vain, and so good-night."

[The above amusing article has in it many instructive thoughts; and in reference to the particular subject of the article, we may remark that we have often thought that the remarkably tough fibre of the dry hop vine

is susceptible of many useful applications, and might become the basis of important manufactures. The subject is worthy the attention of those interested in the working of vegetable fibres.]

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Composition of Cow Dung and Urine.

As it has been frequently said that cattle are on many farms to be looked upon merely as manure-manufacturing machines, it is a matter of paramount importance that there should be a correct estimate of the amount of that commodity which they are capable of producing. As yet, however, we are singularly deficient in precise information on this point. There are numerous analyses of farmyard manure, and a few of the dung and urine of different animals; but so far as I know, the experiments of Boussingault are the only ones in which an attempt has been made to determine the quantity of the different constituents of the dung and urine which are produced in the course of twenty-four hours. His experiments were made with the object of instituting a comparison between the quantities of carbon, hydrogen, oxygen, nitrogen, and ash contained in the food, and those in the excretions, and hence do not give complete information as to the value of the latter. It was therefore with much satisfaction that I availed myself of the opportunity of examining the dung and urine of milch cows, afforded me by Mr. Telfer of Cunning Park, who at the same time, carefully determined the quantity obtained during twenty-four hours. In these analyses I restricted my attention principally to the substances possessing value as manurial agents, and hence that of the urine does not give the proportions of *all* its constituents, but only of those requisite to form an estimate of its value:—

Cow's Urine.

The quantities expressed in *grains* in the *gallon*—

Organic matters	1767.65
Ash	1516.05
Total solids per gallon	3283.70

The ash contained per gallon—

Potash	779.27
Soda	87.26
Phosphates of lime and magnesia	24.33
Phosphoric acid combined with the alkalies	3.58
Ammonia	312.11

Cow-dung.

	Per cent.
Water	81.78
Organic matters	15.30
Ash	1.02
	100.00
Ammonia	0.35

Composition of the Ash:

Potash	5.20
Soda	3.74
Lime	10.47
Magnesia	6.39
Oxide of iron and alumina	2.79
Phosphoric acid	14.98
Sulphuric acid	2.5[illegible]
Chlorine	1.80
Silicia	36.94
Charcoal	1.81
Sand	12.65
	99 32

According to Mr. Telfer's determination the cow yielded 27 lbs. of dung during the night, and 33 during the day, or 60 in all, and this he has also found to be the average over a pretty long period. The quantity of urine in the twenty-four was 18 lb., and the gallon weighed 11 lbs. Taking these data, the quantity of the different matters yielded in 24 hours appears to be as follows:—

Ammonia:

In the urine	511.8 grains.
In the dung	1470.0 "
Total	1981.8 = 4.33 oz.

or 103.3 lb. per annum.

Potash:

In the urine	1279.2 grains.
In the dung	420.0 "
	1699 2 = 3.80 oz.

or 88.5 lb. per annum

Phosphoric acid:

In the urine	24.6 grains.
In the dung	1204.0 "
	1228,6 = 2.81 oz.

or 64 lb. per annum.

The other constituents have so small a value that it is scarcely necessary to take them into account in estimating the worth of the manure. If now we take the ammonia at the price of 6d per lb., potash at 3d, and phosphoric acid at 1½d, the annual value of the excretions of one cow will stand as follows:—

103.3 lb. of ammonia	£2	11	6
88.5 " of potash	1	2	3
64.0 " of phosphoric acid	0	8	0
Total value	£4	1	9

In round numbers, therefore, the annual value of the dung and urine of a milch cow may be estimated at £4.

In adopting this estimate, it is important to observe that there are several matters to be taken into consideration.

1st. It applies to a milch cow of the Ayrshire breed, and may not give a correct view of the quantities produced by animals of the larger breeds. It is probable, however, that the produce will be nearly proportionate to their weights. The weight of the cow from which the urine and dung were obtained was not determined, but it was of the ordinary size, and in all respects an average animal, so that a tolerably accurate comparison with any other kind may be made by calculating from the average weight of the Ayrshires.

2d, It applies to milch cows with a fair average supply of food; and must not be supposed to give an accurate view of the produce to be obtained from cattle put up to feed. It is probable that the latter produce doth dung and urine of materially greater value, at least towards the close of the period of fattening. It is known that when cattle are first put up they produce poor dung, for they thoroughly exhaust the nutritive matters contained in the food; but as they become nearly fat, they assimilate only the more really available nutriment, and hence a larger proportion of valuable matter passes off in dung and urine, and appears in the manure. At the same time it is not impossible that the uniform system of feeding adopted with milch cows, may give a produce which does not differ from the *average* obtained at different periods of the fattening process.

3d, In estimating the value of dung and urine, it must not be forgotten that they have an effect in the production of farmyard manure over and above the mere quantity of valuable matters they yield; for as they undergo a species of fermentation, they communicate the tendency to decompose to the straw or other litter with which they are mixed, and render its valuable matters more immediately available. Straw employed alone as a manure, acts very slowly, and scarcely produces any immediate effect; but if it has partially decayed, its action is much more rapid; and in producing this decay, or fermentation, dung and urine are especially effectual.—*Transactions of Highland and Agric. Society.*

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Management of Dairy Cows.

Messrs. Editors—In the April no., of *The Cultivator*, I noticed some inquiries in regard to several points concerning the management of cows. As I have been connected with a dairy ever since I can remember, and believing no good farmers will pursue a course of management with either dairy or farm without first satisfying his mind with good reasons for so doing, I shall take the liberty to respond to the call of your correspondent, giving him the mode of management among dairies in this vicinity, together with reasons, from which your correspondent may draw his own conclusions.

In answer to the first query—Is it best to milk a cow that is giving milk up to the time of calving?—With dairies here it is calculated to have their cows come in about the month of March, and not to milk from six to eight weeks prior to calving. The reason for discontinuing milking for that perod, is—1. The milk shrinks down to a small quantity, which soon becomes almost worthless for family use—2. A cow needs some respite to recruit her. It is enough for her to nourish the fœtus. This applies to a dairy of cows fed upon hay and oat straw until near the time of calving, when they should have good hay cut in the herbage, to be followed about the time of calving with equal parts of corn and oat meal, 4 quarts per day.

There are cases of cows calving in summer, in good condition and high feed, which may be milked up to the time of calving, and give good milk. In such cases probably no injury results from milking them. But when milk lessens in quantity and deteriorates in quality, nature indicates the proper time to cease milking.

Your correspondent adds that he has a cow 5 years old, which gave promise with her first calf, of becoming a good cow, but has not as yet fulfilled his anticipations. He asks if this is the effect of milking too long? I should think not, from the fact that such instances are known where the heifer has been dried off at the usual time. Neither are these instances rare, nor is the quantity of milk given by the heifer with the first call, a safe criterion to judge whether she will become a good cow or not. Some heifers, which with their first calf give but a small quantity of milk, will in two or three years become good cows.

Query 2d. Is it best to feed cows before, at the time of, or after milking? I think it immaterial, as the process of digestion does not take place during the time she is eating or immediately afterward. She is a ruminating animal, and must first masticate her food. We usually when feeding both hay and meal or roots, feed one before and the other after milking.

Query 3d. Is it best to milk at regular intervals of 12 hours, or to milk half an hour after sunrise and at sundown, all the year round? Milk at regular intervals of 12 hours as near as possible, by all means, especially during the hot summer months. Cows then feed mostly in the morning and evening, choosing to rest in the cool shade through the middle of the day; hence they should be milked and turned out before sundown.

As regards the manner of milking cows, the quickest way a cow can be milked and milked clean the better, and this can be done in one operation as well as two.

His experience in salting cows seems to be the reverse of dairymen in general. An ounce of prevention is worth a pound of cure. A small handful of salt given to cows twice a week seems to act as a preventive against many of the diseases incident to neat cattle. Besides regular salting in small quantities, saves a great amount of labor at the churn—*a fact worth knowing* to those who have to toil an hour or more to bring a few pounds of butter, and perhaps then of an inferior quality. Our dairy maid has repeatedly told me when I had neglected to salt the cows at the usual time, by the churning.

In regard to spaying cows, I am not as yet satisfied with its utility for dairy purposes. I have never seen the operation performed, but should judge from the anatomy of the cow that the operation cannot *always* be safely done even by a skillful veterinarian.

I hope, when the successful competitor for the greatest amount of butter and cheese made through the season, shall have *won* his laurels, that the various gentlemen who contend for the prize will give the readers of *The Cultivator* their modes of management in their respective dairies, which no doubt will be thankfully received by them. A. B., *Charlotte, Vt.*

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CEMENT CELLARS.—Mix 2 parts of the best water lime, or cement, (proved such,) with 3 parts of sharp, clean sand, and spread immediately over the cellar bottom. This will become like stone. A more perfect bottom, and requiring less cement, is made by first finely and evenly paving the bottom, then applying rather thin mortar of water lime. It runs down among the stones, and all form a hard mass. The best mortar will soon harden, and it is therefore best to mix the lime and sand *dry* first, and then mix with water such portions successively as may be quickly applied.

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What can be done with one acre of ground.

The editor of the *Maine Cultivator*, published, a few years ago, his management of one acre of ground, from which we gather the following results:

One-third of an acre of corn usually produced thirty bushels of sound corn for grinding, besides some refuse. This quantity was sufficient for family use, and for fattening one large or two small hogs. From the same ground he obtained two or three hundred pumpkins, and his family supply of beans. From the same bed of six rods square he usually obtained sixty bushels of onions, these he sold at one dollar per bushel, and the amount purchased his flour. Thus from one-third of an acre and an onion bed he obtained his breadstuffs. The rest of the ground was appropriated to all sorts of vegetables for summer and winter use—potatoes, beets, parsnips, cabbage, green corn, peas, beans, cucumbers, melons, squashes, &c., with fifty or sixty bushels of beets and carrots for the winter food of a cow. Then he had a flower garden, also raspberries, currants and gooseberries in great variety; and a few choice apple, pear, plum, cherry, peach and quince trees.

Some readers may call the above a "Yankee trick." So it is, and our object in publishing it is to have it repeated all over Yankee land, and everywhere else. If a family can be supported from one acre of ground in Maine, the same can be done in every State and country in the Union.

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Liquid Manures.

MESSRS. TUCKER & SON— Salem correspondent, R. B., complains that when liquid manures are recommended, instructions for their use are not given. He asks "how much guano, how much soot, and how much urine, to 150 gallons of water?"

Now R. B. has a previous question to settle. Are his soils such by nature, or by underdraining, that any quantity of water will readily pass off through them? If not,—if the water has no way of escape but by evaporation, then liquid manuring is out of the question; for nothing is better settled than that, in order to its beneficial application, the soil, and not only so, but the subsoil, to a depth of at least three feet, must be pervious to water.

If this question is settled in the affirmative, then another arises—a question of economy—has R. B. any means of applying liquid manure, at a very small expense? If no, liquid manuring is out of the question with him, unless he wishes to farm without a profit, as I suppose he does not. You may water a small garden plot with the hand engine, without loss of labor. Possibly you might apply liquid manure to a very small field, by means of an ox watering cart, if very near the barn, with paying results. But you can never afford to apply it to a considerable mowing plot, unless you have the means of doing it, at a greatly diminished expense, as compared with either of the above.

And now for R. B.'s question:—Five lbs. of guano, 20 lbs. of soot, or 50 lbs. of putrid urine (it should be used in no other state,) would be quite enough for 150 gallons of water. Were you to reverse the form of the question, and ask how much water to a ton of guano, of soot, or of urine, the answer would be easier. It would be simply—a great deal more than you would be willing to apply, by any means ordinarily existing on a farm. The idea of liquid manuring is not that of besmearing over the growing plants with a mixture about as thick as the painter's oil and lead. It is rather that of watering with a nearly transparent fluid. The first falling rain, after a long dry spell, especially if it be near a city, where smoke, soot, and various gasses has arisen and mingled with the falling water, gives the best possible idea of liquid manuring. Indeed it is liquid manuring, in its perfection; and any liquid manuring which does not pretty closely resemble it, is wrong, and does not deserve the name. The substances dissolved, must be diluted in large quantities of water, or the object—that of forcing plants with food convenient for them—is not gained. We want that the water should carry the food down to the roots of plants; but this it will not do, unless applied in great quantities.

Liquid manuring is next door neighbor to irrigation—is almost the same thing. Either implies a homœopathic dose of some fertilizer in a plentiful allowance of water; and the great weight of the fertilizer, thus diluted, will be an insuperable obstacle to this mode of application, till some way shall be devised for applying it, for a less number of mills per ton than it now costs. But if your correspondent will put on his rubber overcoat, and sow his guano, say 250 lbs. to the acre, just as a northeast rain is commencing, he will by the aid of Providence, give it as much as 150 gallons of water to every five pounds of guano. This would be a very

respectable liquid manuring. The harder and longer the rain, if his ground be porous and not too steep, the better; and if he would apply his soot and urine, as top-dressings, in the same way, I see not why it would not be good practice. If the application were made rather late, after the grass had started pretty well, there would be less loss of ammonia; and possibly it might pay to make it at different times, with an interval of ten days or a fortnight between. J. A. N.

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A single fact may enable us to judge how far the high price of wheat which has ruled for some years, has been an advantage to this country. Upper Canada is, at this moment, and has been for several months past, dependent on the United States for its principal supplies of beef. Large droves of cattle come into this market every week from the Western States. For several months past nearly nine-tenths of the beef consumed in Toronto has been supplied by the "Great West." Mr. Mullaney, who has purchased some five hundred cattle during the last two months, has obtained but forty-seven of them in Canada; and these were not purchased from farmers, but from a distillery in Brantford. But not only are Upper Canadian cities, such as Toronto, supplied with American beef: country villages, in the heart of the best agricultural districts, acknowledge the same dependence. For some time, butchers living in the villages along Yonge street have been in the habit of purchasing American cattle, in Toronto market. Now the villages eastward, such as Whitby and Bowmanville, have also began to look in the same direction for supplies of beef. A cattle jobber, living in Bowmanville, who used to bring large quantities of fat cattle to Toronto market, was yesterday purchasing fat American cattle for the villages eastward of this city, which are situated in as fine an agricultural district as any in America.

The explanation of this abnormal state of things is, that the high price of wheat which has ruled for the last few years has caused our farmers to devote themselves so exclusively to the production of that article, that they neglect every thing else. The American farmers act with more wisdom and prudence. When a whole country abandons itself to the production of a single article, because that article temporarily commands a high price, it does more than is implied in the term rash speculation. It plays the *rôle* of the gambler who stakes every thing on a single throw. If wheat fall, or the price fall, temporary ruin would be the result. The chances of the season or the turn of the market may make all the difference between prosperity and comparative ruin. And of all the fickle things in this world, what is so fickle as the seasons? As for the markets, when they are unnaturally high, there must inevitably be a fall. The risk of trusting alone to a crop of wheat is therefore little short of absolute madness. We may be told that all is well that ends well, and that if we have grown wheat and imported cattle we have made the most of our resources, under an almost unprecedented continuance of high prices and the favour of the seasons. But this conclusion must not be rashly admitted; for if it be true that more money had been made for the moment, it still remains to be seen what will be the result upon the soil of this continuous over-cropping with wheat. The most productive lands may be destroyed and rendered valueless. Vermin and disease will seize upon crops which the soil is no longer capable of bringing to maturity. It has been so in Lower Canada; and the result was no freak of nature; it was the offspring of an inevitable law. Why then should Upper Canada expect to escape a natural punishment which has overtaken Lower Canada? The hope is delusive. Nature will insist on the observance of her laws, or she will inflict the punishment of disobedience. Let the farmers of Upper Canada take warning before it is too late; and see to it that they do not by pursuing a scourging system of cropping reduce themselves to the position of Lower Canada, which, from being, more than half a century ago, an extensive exporter of wheat, has now become an importer of the same article for the supply of her necessities.—*Toronto Leader.*

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Apples.—*Several kinds in one Tree.* In grafting large trees, several varieties of scions are frequently employed in forming one new top; there are several objections to this practice.

Every one at all familiar with fruit trees, must have observed that each variety has a mode of growth peculiar to itself, and those who have had much experience can often ascertain the kind, when not in fruit, by this circumstance alone. Some varieties are vigorous and of rapid growth; others are slow and unthrifty, and others of short duration and subject to decay early. A tree combining these discordant elements can possess little of symmetry or beauty, and the most judicious cannot remedy the evil. For instance, a tree may be grafted with the Northern Spy, which is of remarkable upright growth; the Roxbury Russet, which is horizontal, or spreading, and the Spitzenburg, whose branches are drooping or pendant. In a few years the scions clash and entangle, and it will be impossible to give them the proper form or direction, and when the tree comes into bearing the defect will be still more apparent. There is another objection to having more than one variety in a tree; it creates confusion in gathering the fruit, and where the kinds somewhat resemble each other, they are liable to get mixed, causing dissatisfaction among the purchasers. Where a person has but little land, and a few large trees which he is desirous to graft to other varieties for his own use, and who is willing to dispense with a good formed top, it may be justifiable to pu several kinds into the same tree, but in extensive orchards it should be avoided.

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Watering Cattle.—Being under the necessity of going out in this driving storm of snow to see that my stock are watered at the neighbouring brooks, has impressed on my mind the loss I am suffering by not having provided water for them in their stalls, or in the barnyard adjoining. This same brook runs within two hundred feet of the barn. where, at an expense not exceeding $50, machinery could be placed, that by the power of the water itself, would yield a constant supply of pure water for as many cattle as the barn will accommodate. That this is so I know, because on my neighbor's farm, where he keeps constantly fifty or more cows, and as many oxen, horses, and other animals, as are needed on a large farm, for the last *five years*, he has obtained all the water they needed, both winter and summer, from a small pond in his pasture distant 2500 feet, forced through a lead pipe, by a fall of only 13 feet head—the original cost of the preparation did not exceed $200. Here, then, at an expense not exceeding $20 a year, is obtained a convenience that is equivalent to the services of one man, and an additional benefit more than double this saving. Think also of the saving made, in the droppings of the animals, one-half of which would be by lots their roaming abroad, and irretrievably lost, when dropped in and floated away with the stream. This is no fancy picture; instances of this kind may be seen in every farming village; aye, more, we have known farmers who have boasted of their convenience of watering their cattle at the brooks, or neighbouring ponds, as their fathers for *a hundred years* had done before them. It is perfectly easy to demonstrate, that the loss sustained in fertillizers, by this careless usage, in this period, at a moderate valuation, would exceed the present value of the farm, at a high valuation. So much for heedlessly going on in the steps of those who have been before us, without regard to consequences.

Remarks.—The above communication is an exceedingly valuable one. It is the notice of such practical every day wants of the farmer, that gives an agricultural paper much of its value. Water arrangements are generally expensive, but that should not deter one from making a beginning. We know a good farmer—one of the best—who pumped water forty years, for forty head of cattle per day. Now this would require at least a minute for each animal twice a day, making eighty minutes, and of very hard work, too. Although after wearing out some dozen pumps, and pretty nearly wearing out himself, he dug a well in the side of a hill twenty-one hundred feet from his barn, put in a hal-inch gutta percha pipe, and for several years past has had the felicity of seeing the water run down the hill by its own gravity, and filling his ample troughs to

overflowing, where the cattle may slake their thirst at will. It also serves for many other purposes, and all accomplished at the cost of one hundred and fifty dollars.—*N. E. Farmer.*

Our friend Brown has not footed up the above account, nor furnished us with the aggregate results of forty years pumping. Eighteen minutes of hard labour each day, for that length of time, will amount to no less than four hundred and sixty-four days or eighteen months—the cost of hard labour for that time could not be reckoned at less than $300 at very cheap wages. The cost of the dozen pumps, and of the wear and tear of the man, we cannot estimate so well, for the want of data.—*Country Gentleman.*

The labonr of pumping from a well or cistern, in or near the barn-yard, is no doubt a serious item; but we think the loss of manure from driving cattle to creeks, or ponds at a distance, as well as the insufficient quantity of water they are apt to be supplied with in such cases, are more serious objections. Where the situation is favorable, a water-ram may be employed to deliver water in the barn-yard, at an expense so small that a prudent farmer would be justified in procuring it. But in ordinary cases we would not be deterred by the labor of pumping from resorting to cisterns. An improved chain pump is now much used for cisterns and wells under 25 feet. They work light and fast, and do not freeze, an important recommendation in this country.

The Broom Business.—Perhaps there is not a branch of American manufactures that has within a few years increased so rapidly in extent, attended at the same time with a large advance in prices, as the manufacture of brooms. The acquisition of California, and the settlement there of a large population depending upon importation for a supply of necessary articles, and the increased population of cities and villages, have of course given an impetus to the trade of this city in brooms, as in almost everything else. But the demand for export to European and Australian markets, has been the leading cause of the large increase in this particular business.

The dealers in this city are principally supplied from Schenectady, in this State; although the towns of Headley and Hatfield, in Massachusetts, furnish a considerable number yearly. The Albany *Journal* noticed a large shipment of Schenectady brooms on Saturday, It may afford some idea of the extent of the business to state. that one firm in this city, sell annually about forty thousand dozen brooms manufactured in Schenectady, and ten thousand dozen from towns in Massachusetts. Most of the brooms manufactured in Massachusetts find a market in Boston. There are half a dozen houses in this city dealing largery in brooms; they are principally in Fulton street.

The ordinary brooms of which we speak, have sold recently as high as $17 a hundred. This is the Schenectady manufacture. In the Massachusetts manufacture, the corn is tied at the handle with a small wire, instead of stout twine, and the article consequently is not considered so valuable. A few years since, brooms which now bring the above price could be bought at from eight to twelve dollars per hundred. Latterly, brooms have been sold by weight, at from eight to eleven cents per pound. The average weight is a pound and a half.

The broom corn used in this manufacture, is raised principally in the valleys of the Mohawk and the Connecticut. The soil of the bottoms along those rivers possesses certain characteristics highly favorable to the growth of this agricultural product. Although the labor attending its cultivation is great, it is considered a valuable crop—being more hardy than maize, and less liable to injury from frosts. It was a good deal cultivated in the Genesee Valley a few years ago, and is now to some extent; but the product goes to supply Western and local markets. The crop is becoming one of decided importance, and it will no doubt attract the attention of farmers more generally than it has done; while to its manufacture, mechanical ingenuity and capital will be turned.—*Courier and Enquirer.*

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Premiums to Farmer's Daughters.—Our State Agricultural Fair is to be held at Watertown, Jefferson county, the last of September, and the Society offers the following premiums:

Girls under 21 Years of Age.

Best lot of butter, not less than ten pounds, made at any time....Silver Cup.
Second best lot....Pair Butter Knives.
Third best lot.....Set Tea Spoons.
Fourth best lot.....Solid Silver Medal.

A statement of the manner of making the butter must accompany each sample.

The Ohio Cultivator (Columbus) offers a premium of a full set (twelve volumes) of that work to the Ohio boy under 18 who will grow the best acre of corn this year and give an intelligent account of the process; ditto to the boy of any State west of Ohio who will do likewise. Ten competitors are required to make the offer hold. We trust this example will be imitated.

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Denuding Land of Trees.—Everywhere man is rapidly denuding the land of its native growth of forest trees, until timbered land has come to be more valuable than the cultivated portions; in the Southern States the timber and soil are both ruthlessly destroyed, in the West, the new and fertile West, lately covered with immense trees, now actually are in want of the timber destroyed within the life time of the present occupants.

Where all the land is tillable, the temptation to clear the whole seems to be irresistible, and, therefore, we find already so many farms at the West destitute of timber. This is inexcusable even in a pairie region—it is still more so in a timbered one. In the first, timber should be planted—in the other it should be saved. Steep side hills should not be stripped of timber entirely. Enough should be left to cover the ground and prevent slides of the soil. These rough points on a farm may be kept as skirts of perpetual beauty, and may be sources of profit at the same time. On many farms, where nearly all the land is cleared lots should be fenced off and allowed to grow up with forest trees; or they should be planted or sown again with some of the best kinds. Whenever this has been done, the results have been of the most encouraging kind.

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Pruning and Culture of Currants.—No fruit pays better for good culture than the currant, yet none is more generally neglected. As there is likely to be a scarcity of summer fruits this year, owing to the destruction of peach and cherry buds, &c., all who have bushes should bestow upon them special attention so as to increase their fruitfulness. Old and neglected bushes should have some of the old branches cut away, so as to give the young shoot a chance to fill their places, and these should be thinned out, if numerous, and shortened if long, so as not to crowd each other. But especially dig out the grass, if any, about the roots, and apply a good dressing of manure and ashes, spading it in; and when the hot weather commences, cover the entire surface under the bushes with tan bark, saw dust, old leaves from the woods, or chip dirt from an old wood pile; this will prevent the growth of weeds, and keep the ground moist, greatly promoting the quantity and quality of the fruit.—Gooseberry bushes should be treated in a similar way, only more attention should be given to pruning, so as to keep the bushes open and the leaves and fruit fully exposed to the air—cutting away half of the last year's shoots, and shortening the rest one half.—Cuttings of gooseberry and currant bushes should be taken off as early as possible, selecting the shoots of the last season's growth, and shortening the tops, say to 8 or 10 inches in length. They may be placed in the cellar, with the butts in the earth or sand, until the ground is fit for planting then set them in warm sandy soil, about two-thirds of their length in the ground.

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Directions for Using Guano—As the aid of guano is now deemed all but indispensable for the growth of the Swedish turnip, remember that it is only the best qualities which are worth the money asked by merchants. Middling and inferior guanos usually sell from twenty to one hundred per cent. above their manurial values, compared with the selling prices of the best qualities. As a rule, therefore, avoid all *cheap guanos, and cheap manures generally*, except you purchase with a reference to an analysis, and that you are thoroughly conversant with

chemical terms, and consequently able to calculate the value of the relative component elements of the manures.

The merchant who offers manures for sale with a reference to an analysis, so far exhibits a desire to act honourably, and such are deserving of the countenance of farmers generally. Those who vend manures with no other title to confidence than by the use of the term CHEAPNESS, should be required, on the part of the purchaser, to guarantee its cheapness by a reference to a chemist of known respectability.

In preparing guano for application, mix it with damp saw-dust. After the mixture lies seven days in the heap, pass it through a riddle. The lumps which remain should be farther mixed with damp sawdust or sand, and again allowed to lie for one or more weeks. If dissolved bones, or ground bones, or manufactured portable manures are to be applied, the whole manures should be mixed previous to application.

For heavy clay soils Peruvian guano is generally the most profitable application. For light gravelly or sandy soils a portion of other manures may be substituted for the guano. These may be dissolved bones, ground bones, or special manufactured manures. There is little danger in over-manuring land on which Swedish turnip is being raised. The following quantities may be regarded as full average applications.

For heavy clay soils Peruvian guano may be applied at the rate of 6 cwts. per imperial acre; for medium clay soils, allow 5 cwts. If farm-yard manure is applied at the time of sowing, 3 cwts. may be sufficient. For soils of medium texture allow 5 cwts. of Peruvian guano and 1 cwt. of any of the other portable manures. With farm-yard 2 cwts. of Peruvian guano and 1 cwt. of other manures will be enough. For light gravelly and sandy soils 2 cwts. of Peruvian guano, 1 quarter of ground bones, 2 cwts. of dissolved bones, and 1 cwt. of one or other of the portable manures may be applied. Where farm-yard manure has been applied, the quantity of portable manures may be reduced.

Nitro-phosphates, superphosphates, and other manufactured manures may be substituted in part for the other manures; but we repeat these should be purchased with a full knowledge of their manurial constituents, and these guaranteed, with special reference to the result of a chemical analysis.

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MICE AND MULCHING.— After the losses of trees by mice the past winter, amounting in the northern states to an aggregate of millions of dollars, cultivators will be disposed to be cautious about anything which may increase the difficulty.

Mulching in summer, to protect from drouth, retain moisture, and keep down the growth of grass and weeds, has been long known as an important operation where the soil cannot be freely cultivated. Mulching for *winter*, by applying manure to be washed into the soil, and to protect the roots from intense cold, is less known, but is highly estimated, and if spaded in, in spring, serves as a good means for enriching the soil. But caution is needed. Summer-mulching must be removed before cold weather, or the mice may find it a convenient habitation; and a more dangerous result may happen to winter applications. We observe in the last number of the Horticulturist, in an intereating communication from DR. WARD, of Newark, N. J., the following recommendation:

Our favorite mulch for the pear—both standard and one quince—is the coarsest unfermented manure the stable and yard can furnish, and applied, invariably, in the fall of the year, that the tender rootlets may be preserved from the injurious influences of the extreme and sudden vicissitudes of temperature through the winter, at the same time that the soluble parts of the manure, dissolved by the winter rains, may be carried to the rootlets that have penetrated deepest in the soil.

The same manure, applied in the spring, enriches simply the surface rootlets, while the greater portion is dissipated under the evaporation, which is so actively carried on during the spring and summer months.

When liberally used, the undecomposed portion remaining in the spring acts the part of a simple mulch, protecting the surface soil around the tree from the action of the summer's sun. So much importance do I attach to this, that these circles are made the receptacles for all the waste vegetable matter that can be collected on the farm. It may possibly be owing to the protection thus given that I have never seen a pear-blight in the orchard.

A part of my trees received last spring, for the first time, a dressing of leather parings from the leather manufactory, with the operation of which I have been much pleased. The supposed influence of the mulch in securing an increased size of the fruit was first suggested by an experiment with some peach-trees that occupied a neglected portion of the orchard, which was suffered to be overgrown with weeds. When pulled, they were deposited around the trees, in their green state, in such masses as to secure rapid decomposition, and thus preserved in a state of moisture the surface of the soil, while all around, the earth was parched with drouth. The fruit (Crawford's late) attained to one-third greater size than ever before grown, and they reached their maturity so much later than ordinary, as to give me a supply much longer than usual, and a quantity for the market when there was no other in competition with it.

The uniform success which has attended Dr. Ward's experiments in raising pears, fully attests the great value of this treatment, which is also corroborated by the practice of others. But we would suggest a single caution. Before applying the winter mulching, raise a small conical mound of fresh earth around each tree, about a foot high, and as steep as the earth will lie after being slightly beaten with the spade. No mouse will ever run up this mound from the mulching, to attack the tree. It is an *infallible* safeguard against these animals, so long as they confine their maraudings to the surface of the earth and beneath the snow. Even if the surface be only kept clean and smooth, mice will not often trouble the trees; but the addition of the mound makes the security complete, even if the trees are in grass land.

The past winter was an exception to all its predecessors, in this respect. The wetness of last summer gave a large growth to weeds and grass, and the mice profited by the protection which this growth afforded. The first deep snow became hard, compact and crusted; and on this crust a second fall of snow came, soft, feathery, and easily penetrated by mice. Taking advantage of these two layers, as they commonly do of a layer of snow on the ground's surface, they passed freely about in every direction, and committed unprecedented havoc. We may not witness the like again in a century—at lesst, we hope so; but if there is reason to apprehend it, it will be well to commence the breeding of cats, ferrets, and rat-terriers, immediately; and rather than meet the disasters of the past winter, we know of many cultivators who would like to purchase terriers by pairs, ferrets by the dozen, and cats (if the know their trade well) by the score. We would go in for fifty good cats, to begin with.

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QUANTITY OF LIME PER ACRE.—"The practice hitherto hass been to apply a large dose of lime at once, and not to repeat it during the lease. For the motive of this practice I would look more to the circumstances in which the farmer is placed in regard to the tenure of his farm, than to any reasonable expectation entertained by him of the action of the lime upon the soil in large quantity. It is felt with the application of lime as with the draining of the farm—the sooner it is dosed, and the seldomer done, the greater profit to him who does it. The opinion is gaining ground, however, that it is better for the tenant's interest to lime in less quantity at a time and more frequently. It would appear, taking the average of the quantities of lime applied in different districts of the country, that about 8 or 10 bushels per acre per annum are applied to supply the supposed requirements of the land, It might therefore be better for the crops, and more prudent for the purse of the tenant, to apply 8 or 10 bushels per acre on the fallow every year during the lease, than 160 or 200 bushels per acre at one time at its commencement."— *Stephen's Farmer's Guide.*

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TREATMENT OF WOUNDS, &c. ON ANIMALS.—*Ointment for Wounds, Sores of all kinds,* and for horses when galled by the saddle or collar, and also for broken chil-

blains.—Take of honey 12 oz., yellow or bees wax 4 oz.; compound galbanum plaster, 6 oz.; sweet oil, half-a-pint. Put the honey into a jar by the fire; then melt the other ingredients, and mix them together; to be spread very thin on linen, and changed twice a-day.

For Cows or Heifers with Swelled Udders from Cold, or Bruises, or after Calving.—Hot fomentations made by boiling in water, marsh mallows, gathered and dried in summer for use during winter, applied twice a day; and after each fomentation a bit of goose grease, as big as a nutmeg, rubbed well over the swelling, is found very efficient. Swellings in any other parts, from chills or blows, or from injury from the horns of others, may be similarly treated; or, in cases where the skin is not broken, hot crab verjuice is most valuable as a fomentation, with goose grease afterwards, as before said.

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GRAVEL BRICKS AND GRAVEL WALKS.—Prof. Cook, in his Geological Report of the Southern District of New-Jersey, furnishes the following valuable information in relation to the use of gravel brick for walls of houses, &c.:

A new building material has been introduced in Cumberland, and some of the adjoining counties, which promises to be both cheap and durable. The common clean gravel and course sand of the country is mixed with one twelfth its measure of stone lime, and made into bricks. These bricks are sun-dried, and then laid up into walls. They are cheap, durable, and but little affected by the changes of the seasons.

In making, the gravel is laid on a common mortar bed—and the lime, which is slacked and made into a thin putty in a lime trough, is then run on the gravel, and the whole worked up into mortar. The bricks are usually made as large as is convenient for handling, and of dimensions to suit the work for which they are intended. The moulds are made, several in the same frame, as deep as the thickness of the brick, and without any bottom. They are set on smooth ground, and filled with mortar. This is worked in a little with the shovel, and struck off at the top. In ten or fifteen minutes the mortar will have set, so that the moulds can be taken off. The bricks are soon dry enough to handle, when they can be piled up, and allowed to dry thoroughly. They are laid in mortar similar to that from which the bricks are made, and the outside of the buildings is roughcast with the same.

The method was introduce at Bridgeton by Robert C. Nichols, Esq., manager of the Cumberland Iron Works. Several buildings of this kind have been erected in Bridgeton, and its vicinity, within the last eight or ten years; and in Norristown, Pennsylvania, it has been in use for seventeen years past. It has stood well, growing harder and more solid every year. The bricks have come to be a regular article of manufacture in several places. Those of 12 by 9 by 6 inches were selling in Bridgeton, last summer, for $20 a thousand, and they could be laid and mortar found, for $10 a thousand; which is less than half the cost of the same measure of red brick wall. The material of which these bricks are made being found almost every-where, and the labor of making and laying them up very simple, farmers and others who have control of labor, can make and lay them at times when the expense of the work would not be felt, and thus a saving much greater than that mentioned could be made. When first laid up they are not quite as strong as other bricks; and greater care is necessary in making a solid foundation; otherwise unequal setting, and cracks in the walls, will result. Care must be taken to make them so early in the season as to be entirely dry before the winter's frost.

Mr. Fowler, of New-York, in his work entitled, "Gravel Wall Cottages, or Homes for all," has described a method of forming the wall directly from the mortar. It is done by setting up boards on their edges, where the wall is to be built, and as far apart as the thickness of the walls. The mortar is filled in between these, and allowed to remain till it has set, when the boards are raised to the top of this wall, and again filled, and so on till the wall is completed. This method, in the hands of experienced workmen, is undoubtedly cheaper than the other; but to unpracticed laborers would, as I believe, be attended with more difficulties. The material is used in the construction of houses, shops, stores, walls for gardens, yards, &c., for alll of which purposes it gives entire satisfaction.

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EARLY TOMATOES.

All who wish to be first on the list of ripe tomatoes must lose no time in sowing a pot or two of seed in the green-house, hot-bed, or in the absence of these luxuries, then in a warm window. If in the latter, get a piece of glass and place over the pot, to accelerate germination, thus forming a minature hot-bed on your own hook. When up into rough leaf, pot off into very small pots, using a tolerably rich vegatable mould for the purpose. When these little pots become full of roots, give them a size or two larger. A dozen or two plants, raised this way, and planted in May, on the sunny side of the garden fence or house and trained up to it, will furnish the family with several dishes of this much used esculent when the price is so much per lb. As it will be no object to have them bearing when the main crop comes in, stop back every shoot after sufficient fruit has set—say one or two dozen on a plant, which will very much accelerate the ripening.

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MESSRS. EDS.—You have had more than one article on the subject, but here is

One Way to Keep Eggs.

During a long voyage to South America, it was noticed how fresh the eggs continued to be. The steward was called on for his secret. He said that as he purchased his stock, he packed it down in small boxes—raisin boxes—and afterwards, about once a week, turned over every box but the one out of which he was using. This was all. The reason of his success is, that by turning the eggs over, he kept the yolks about the middle of the albumen. If still, the yolk will after a while find its way through the white to the shell, and when it does so, the egg will spoil. Hens understand this fact, for they, as is well known, turn over the eggs on which they sit at least daily.—*Country Gentleman.*

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DEEP TILLAGE

We can see no good reason why deep tillage should not be practised to a great extent upon most of our farm land. It stands to reason that if the soil is loosened but four or five inches with a hard, impervious subsoil, that deep rooting plants cannot be nourished so well as if the subsoil was loose. Some writers object to deep ploughing because the subsoil thrown upon the top often does injury to the crop. As to throwing the soil directly to the top, we have doubts of its immediate benefits to crops; but when the subsoil plough is used to pulvarize the ground, and the next year or so this subsoil is incorporated with the surface soil, we cannot but think it would be of material advantage.

What claim does the West put up for its fertile lands over ours? Why, that their soil averages from two to six feet in depth. Does not this deep stirring of the soil do that very thing for us. The importance of deep culture is beginning to be better understood and more practiced, for its evident security against drought. But it has many advantages to induce its adoption. When a piece of land has been ploughed for a series of years only a few inches in depth, the bar of the plough passing yearly about the same depth, makes for itself a hard, well beaten road, impervious to heat, and to the roots of plants, and to water; and renders the surface very liable to be washed away by our heavy rains, especially upon our hill sides, leaving the subsoil smooth and hard exposed. How much of our land has been injured in this way?

It looks feasable that if the subsoil was loosened several inches, that the water would soak into the ground, and go off gradually, instead of forming a great fore-bay driving everything before it. But this subsoil, unless stirred, is of no use to the growing crops. In many cases it is rich in the substances composing the food of plants, and by being exposed to the air and action of frost would increase the productiveness of land. The supply of the various salts, so important to vegetation, and which in wet seasons are carried into the subsoil, by deep tillage are liberated and drawn up by the roots of plants, and are vastly beneficial to the land. Deep culture tends to retain so much moisture in the loose particles of earth, that it operates like a sponge, preventing it from becoming cloddy, and yielding up water as it is demanded by the growing crops.—*Western Agriculturist.*

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ON THE CULTURE OF THE POTATOE.

A correspondent of the Country Gentleman after giving his opinion as to the disease in the potatoe, gives his method of growing them as follows:—

I will now state the mode of culture I intend to pursue the next season. I do it *in time*, so that if any objections be made to it I can have an opportunity to correct my plan before planting time. I have a field of 5 acres—an old pasture, the clover pretty much run out. The stones have all been taken off, having

dug it over with the crowbar some 7 or 8 years since. I intend to plow deep early in the spring, and turn the furrow as flat as can conveniently be done, so as to destroy all vegetation. Soon as the top of the furrows becomes dry and loose, to harrow the field with a short tooth harrow, so as not to invert the sod, and to do this as often as once a week until I get ready to plant. Then roll the land with a light two-horse roller, so as to obliterate all the marks of the drag teeth. Then with a one-horse marker, to mark it out both ways in rows 2 feet 9 inches asunder—plant one piece about the size of a butternut in the angles—throw in the hill at the same time, a small handful of plaster, hen manure, guano or ashes, whichever I may have on hand at the time—cover with a hoe not to exceed 1½ inches in depth, making the hill broad and flat, taking care that the roots of grass or weeds be brought round the hill, and all such on the surface to be carefully destroyed. This kind of care would lessen the work of hoeing very materialy—"a stitch in time saves nine." Soon as the tops have fairly broken through the hill, give them another small handfull of plaster or other fertilizer, so as to give them the start of any weeds that may chance to have escaped the hoe in planting. As soon as the tops are of a good size, and in dry weather, run a shovel plow both ways between the rows; lastly, with the hoe stir all the ground between the rows left by the plow, and the field is done until time to dig.—My experience is all in favor of early digging. Observations on this part of the subject must be left till another time.—The variety that I cultivate are just as good for cooking, dug early or late.

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TARTAR SHEEP.

In a comunication, originally published in the *Progressive Farmer*, Dr. Emerson, of Philadelphia, gives some interesting information relative to this new breed of sheep, lately introduced into the United States from China. He describes them as good size, with prominent or Roman noses, ears droping forward, and agreeably expressive faces, which are covered with fine glossy hair. The fleece is unshrinkable, and best adapted for felting purposes and the coarser fabrics. The value of the breed, he thinks, consists mainly in the remarkable facility it offers to supply animal food of the most excellent quality, almost at pleasure, the ewes having lambs twice a year and from two to four at a time. An ewe belonging to him brought three lambs in February, 1855, all of which were raised to maturity. Early in November she had two lambs more, whilst her two February ewe-lambs each brought a lamb at the same time, making her a grandmother in nine months, and her progeny within that time no less than seven!

With respect to the qualities of the meat, the Doctor states that, when in China several years ago, he was not a little surprised to observe the eagerness manifested for mutton. Although capons, game and other luxuries were common upon the table, he never saw a leg of Tartar mutton introduced where anything was left but bones. He at first attributed this relish for mutton to its high price, ordinally about 50 cents per pound. But he was afterwards convinced, that after making dce allowance for the cost, there was still more due to the intrinsic good qualities of the meat, wnich is entirely free from any woolly or other disagreeable taste, and remarkably delicate.—*Phil. Ledger.*

AGRICULTURE IN GREAT BRITAIN AND FRANCE.

France has a third more land under cultivation than England. It has in general a finer soil and a milder climate, and being a sunny land is better adapted to wheat and the cereals than is England with its rainy summers, late autumns, mild winters and equal temperature which produce an evergreen vegetation. The north-east half of France has the finest soil and is the best cultivated. The southern half does not compare favourably with Ireland for its agriculture.

English farming mainly consists of natural and artificial pasture, turnip potato, barley—oats in the spring, winter wheat and thus, meat, beer and bread produced for man and beast. The English sky is eminently propitious to grasses and roots: and we say that Great Britain had its main attention directed to growing the agricultural products of grain, meat, cheese and wool.

France on the contrary adapting itself to circumstances, produces wheat and the other cereals, sugar, grapes, wine, rape, tobacco, the sugar beet, the olive and mulberry; while two and a half milion acres of her soil are cultivated as gardens and orchards. The vine in France covers five millions of acres, and it averages near $20 the acre. The entire yield of the above crops amount to 40,000,000f annually. The product of the vine is usually 20,000,000f yearly, and it is no larger now than it was sixty years ago. Indeed recently the crops of grapes and vines have fallen off about four-fifths owing to the vine disease, and wine and grapes are 100 per cent higher than formerly. Even the French soldires are now obliged to receive coffee for their army rations instead of their old native beverage wine. It is on account of the disease of the vine in Europe that American farmers are cultivating the vine on their light lands as lately mentioned in this paper.

One thousandth part of France is cultivated to raise the beet root; and twenty times as much of the best land is devoted to the raising of rape for oil.

Both Great Britain and France are much devoted to the rising of wool, having 35,000,000 of sheep each; while the United States have but 22,000,000, or only an advance of two or three millions since 1840. One half of the French sheep are marinos, introduced from Spain in the days of Louis XVI. The French farmers raise sheep principally for their wool; and hence the traveller finds the Leicester and South Downs, and such varieties in the father land. The South Downs furnish from 80 to 100 pounds of mutton, at two years. The English acre generally supports three times as many sheep as the French.

As to cattle, France has 10.000,000 against 8,000,000 in Great Britain and Ireland, divided as follows: England and wales 5,000,000, Scotland 1,000,000, Ireland 2,000.000. And yet the French have less meat each per day than the English.

Two hundred years ago, France surpassed Great Britain in agriculture; but now the tables are turned, and the English farmers excel their neighbors on the continent. To those who would know further of this subject, we would refer particularly to an instructive article in the January number of the *Edinburgh Review.*

——:o:——

HARD-PAN.—Wherever the plough will reach the hard-pan, the deeper it is broke up the better; and the only proper time to do it is late in the fall, after the earth has become well saturated with the fall rains. Although I am opposed to wet ploughing in the summer, I dont care how wet, late in the fall, when not to be worked or sowed in the fall. I have found that five good horses—three in one plough and two in the other—the first turning a furrow of 17 inches wide and 10 to 11 deep—with the second plough, either a subsoil or narrow two-horse, go as deep as possible. I have used in preference, the two horse plough, for the reason that it exposes more of the subsoil to the action of the frost. What thousands and thousands of dollars would Jack Frost be worth to many farmers, if they would only give him something to do. He works cheap—he asks nothing. All the men in the world, cannot make such a machine. Just let him look at this hard stiff subsoil and hard-pan. Throw it down on the surface, and he will tear and crumble and mollify it, and make it pervious to water and air. It will then become friendly, and mix up with the adjoining, and so deepen the soil and improve it. I dont know of one farm in Frederick County, but would pay three or four times what it would cost to subsoil it properly. It not only gives a greater range for the supply of food for plants, but in case of great rains it will sink down, and not lay on the surface to scald the grain and bake and harden the earth. It is surely well known to every man of observation and experience that to raise large crops there must be a deep rich soil, and where ever there is a tenacious stiff clay near the surface, that cannot be done. Much depends on the nature of the soil, whether the deep fall ploughing will benefit so much or not. If the land is composed of a large proportion of sand and alluvial clay, being pervious to water, it may be ploughed deep at any time. But where there is a large proportion of stiff clay, and above all if there be hard-pan, by all means turn it to Jack Frost very deep, any time from the first of November to new-year.—*Albany Cultivator.*

——:o:——

A VALUABLE HINT TO BUILDERS. — The *Scientific American* publishes the following suggestion from a correspondent, and endorses it as sound and reasonable advice. We venture to say it is worth more than five dollars, to any man who is about to build a house in our cold climate:—"This cold winter brings to mind a matter connected with the building of houses which I do not remember ever to have seen in print, and which, if generally known, is seldom practiced. It is this: in any cold climate cellar walls of houses should never be filled in around with loam or clay, or earth that retains much moisture, because the frost expands it, and it exerts a great pressure against the walls, tending to thrust them out of position. The effects of this are seen in the many cracked walls; the breaking of window and door sills and lintels; unjointed verandahs; and windows and doors rendered incapable of opening and closing, &c. In our New England States, this costs us many thousands of dollars yearly, all of which may be saved by filling in a few inches of sand or clean gravel next the walls."

——:o:——

SUBSOILING *vs.* DRAINING.—There is no doubt but a soil made deep and mellow will resist both drought and deluge better than a thin, hard soil. The reason is obvious. If you have two inches of soil on a board, or in a box, half an hour's rain makes it complete mud, and a half day's sunshine will convert

that mud into hard lumps, especially if the soil is clay, or any considerable part clay. But if instead of two inches it is two feet, it will take a long rain to wet it through, and on part of it will be mud, untill there is water enough to make it all mud, and then in drying, no part will be very dry until the whole is dry. A deep mellow soil will bear a large amount of rain without destroying its loose, porous character to such a degree as to exclude the air. So far as we have observed, a piece of dry gravelly soil, if plowed deeply, will stand a drought better than wet clay soil if plowed shallow, and underlaid by clay or hard pan.—*Culturist and Gazette.*

———:o:———

POTTED CHEESE.

An "old dairy woman" sends the following receipe to one of our exchange journals, for the benefit of those who keep but a cow or two :—

Prepare your curd as you would for the press, then put it in a bag secure from flies, and hang it in an open room until thoroughly drained, then chop fine and pack in a brown earthern crock, (stone is not as good,) put in a layer of cheese, a very little saltpetre, and sprinkle in a little good brandy, say ½ pint to 20 lbs. When your crock is full press down with the hand; cover your crock with two or three thicknesses of writing paper, pasted to the crock to secure from flies, over the paper tie a cloth to prevent bugs from gnawing through, and set in a dry place not too warm. In one month it will be good, but in six it will be "cheese that is cheese."

———:o:———

PLANTING FRUIT TREES FOR OTHERS.—The Spaniards have a maxim, that a man is ungrateful to the past generation that planted the trees from which he eats fruit, and deals unjustly towards the next generation, unless he plants the seed, that it may furnish food for those who come after him. Thus when a son of Spain eats a peach or pear by the roadside, wherever he is, he digs a hole in the ground with his foot, and covers the seed. Consequently, all over Spain, by the roadsides and elsewhere, fruit in great abundance, tempts the taste, and is ever free.

———:o:———

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

1st August, 1856.

Hay from 7 to $9 per 100 bundles.
Straw from 2 to $3. do.
Fresh Butter, per lb. from 1s 4d to 1s 6d.
Salt Butter, do from 10d to 10½d.
Country Cheese, from 6d to 8d.
Wheat, 6s 6d to 7s.
Barley, 4s 10d to 5s.
Rye, none.
Oats, from 2s 4d to 2s 6d.
Yellow Indian Corn, from 3s to 3s 9d.
Indian Corn, (Ohio) 2s 6d to 2s 9d.
Buckwheat, from 2s 6d to 2s 9d.
Timothy, none.
Peas, from 3s 6d to 3s 9d.
Beef, per 100 lbs, from $4 to 8.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 7d.
Veal, 7d to 7½d.
Eggs, 10d to 11d.

BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvments to which the Fund is applicable is close at hand, it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows :—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch 159, and not already apportioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of those Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified,
W. H. LEE, C. E. C.
P. M. VANKOUGHNET,
6 ins. Minister of Agriculture.

BUREAU OF AGRICULTURAL STATISTICS,
25th July, 1856.

To Emigrants and others Seeking LANDS FOR SETTLEMENT.

THE PROVINCIAL GOVERNMENT have recently OPENED out THREE GREAT LINES OF ROAD now in course of completion, and have Surveyed and laid out for Settlement the Lands, through, and in the vicinity of which those Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "THE OTTAWA AND OPEONGO ROAD," "THE ADDINGTON ROAD," and "THE HASTINGS ROAD."

THE OTTAWA AND OPEONGO ROAD,

Commences at a point on the Ottawa River, known as "Ferrall's" a little above the mouth of the Bonchere River, and runs in a easterly direction, passing through the Northerly part of the County of Renfrew.

It is intended to connect this Road with a projected line of Road known as "Bell's Line" leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Bradenea at a distance of about 53 miles from the River Ottawa, forming, with "Bell's Line," a great leading road or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for settlement a vast extent of rich and valuable land.

This road and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Land in this district is Mr. T. S. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from MONTREAL up to the Ottawa River to a place called Bonchere Point, and thence by land some twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

THE ADDINGTON ROAD,

Commencing in the Township of Anglesea in the northern part of the county of Addington, near the Village of Flint's Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 35 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is M. E. Perry, who, for that purpose is now resident at the Village of FLINT'S MILLS. The outlines of five townships of very superior land are already surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka, and between it and River Madawaska. The Townships are called respectively Abinger, Denbig, Ashley, Effingham, Anglesea and Barrie.

The direct route to this Section is by way of KINGSTON, Canada West, thence to NAPPENEE, either by land or Steamboat, and thence North to the Township of Kaladar, and the Village of FLINT'S MILLS where Mr. Perry resides.

THE HASTINGS ROAD,

Almost parrallel to the Addington Road, and at a distance West from it of about 32 miles is the HASTINGS ROAD. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the OTTAWA and OPEONGO ROAD and its extensions.

The Government Agent is Mr. M. P. Hayes, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order.—The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles and money is now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this Section, which is easily accessible, is by KINGSTON, Canada West, thence by Steamboat up the Bay of Quinté to BELLEVILLE, 56 miles and thence by a good Road to HASTINGS, 28 miles.

In order to facilitate the Settlement of the Country and provide for keeping in repair the Roads thus opened: the Government has authorized Free Grants of Land along these Roads not to exceed in each case ONE HUNDRED ACRES upon application to Local Agents, and upon the following

CONDITIONS.

That the Settler be eighteen years of age.

That he take possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of settlement are duly performed; after which accomplishment only shall the settler have the right of obtaining a title to the property. Families comprising

several settlers entitled to lands, prefering to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot on which they live) provided that the required clearing of the land be made on each lot. The non accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every informations to the intending Settlers.

The LOG-HOUSE required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived Settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The Lands thus opened up and offered for settlement, are, in sections of Canada West capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce, grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighbourhood of these three roads will be found to be very similar in quality and character, and covered with every variety of timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for Manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet—will produce a Barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate is about FOU POUNDS Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a capital of from £25 to £50, according to the number of his family will soon make himself comfortable, and obtain a rapid return for his investment. The single man, able and willing to work, needs little capital, besides his own arm and axe he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these Districts is essentially good The snow does not fall so deep as to obstruct communication; and it affords material for good roads during the winter, enabling the farmer to haul in his Fire-wood for the ensuing year from the woods, to take his produce to market, and to lay in his supplies for the future—and this covering to the earth, not only facilitates communication with the more settled parts of the District, but is highly beneficial and fertilizing to the soil.

In all the localities above named, wherever Settlers, have surplus produce, there is a good market for it near to them—farm produce of all kinds being in great demand by the Lumber or Timber Merchants, who are carrying on extensive operations throughout those parts of the country.

According to the ratio of progress which Canada West has made during the last ten years, the value of property on an average doubles within that period; irrespective of any improvements which may have been made by the Settlers.

In many Counties the value of Land, once opened for settlement, has increased FIVE F LD in the period named, but the average value of such land, according to the statistics of Canada West, DOUBLES EVERY TEN YEARS in the mere lapse of time, exclusive of any expenditure thereon —and it is not too much to expect that this ratio will not diminish for generations to come.

The sections of Country opened by these roads lie in and to the Southern part of the Great Ottawa Region, stretching from and beyond them to the shores of Lake Huron, to Lake Nipissing, and to the Ottawa River—an immense extent of country whose resources are now seeking and will rapidly obtain developement.

The OTTAWA COUNTRY, lying south of Lake Nipissing and of the great River Ottawa, and embracing a large portion of the land offered for settlement, is capable of sustaining a population of EIGHT MILLIONS of PEOPLE, and it is now attracting general attention, as the more western portions of Canada are being rapidly filled up.

The Parliament of Canada in its last Session, incorporated a company of a Railway to pass through this Ottawa country from the Shores of Lake Huron to the City of the Ottawa, and thence Eastward.

A survey of the River Ottawa and the neighbouring Country has been undertaken, and will be completed in the present year: its principal object being to ascertain by what means the River Ottawa can be rendered navigable and connected with Lake Huron so as to enable vessels to pass by that route from the most Western Waters into the River St. Lawrence and the Ocean. These projected works are alluded to, in order to show that the attention of the Government, Parliament and People of Canada has been fixed upon this important portion of the Province.

P. M. VAKOUGHNET,
Minister of Agriculture, &c.

AGRICULTURAL SOCIETY, No, 1.

OF THE

COUNTY OF CHAMBLY.

THE ANNUAL EXHIBITION of STOCK, &c., &c., of this Society, will take place on the COURT-HOUSE GROUNDS, in the Village of ST. JOHN'S, on WEDNESDAY, the 24th day of SEPTEMBER next, at TEN o'clock, A. M. For further information see Prize List.

L. L. ROY,
Secretary-Treasurer.

Blairfindie, July 12th, 1856. 2

NOTICE.

THE COUNTY of SHEFFORD AGRICULTURAL SOCIETY, No. 2, will hold its ANNUAL EXHIBITION and CATTLE SHOW at the Village of GRANBY, on THURSDAY, the 9th day of OCTOBER next, commencing at TEN o'clock, A. M., for particulars see Prize List.

By Order,
F. WOOD.
Secy-Treasurer.

Granby, Aug. 1st 1856. 2 p

Paper, Account Books, &c.

FROM the different Vessels now in Port, the Subscriber has received a large portion of his importation of WRITING, WRAPPING and DRAWING PAPERS,—ALSO— of ACCOUNT BOOKS in very great variety.

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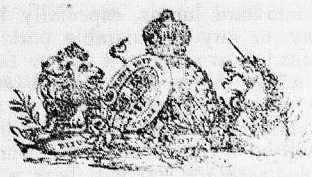

Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the undermentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODDRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl, (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

8th Range.

Lots 1 to 13 incl. (100 each,) 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68,) 6 (69), 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100), 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120) 48 (122), 49 (80).

5 ins.

Just Published

New Map of British North America.

COMPRISING Upper and Lower Canada, Nova Scotia, New Brunswick, Prince Edward's Island, and Cape Breton, by W. & A. K. Johnston, Edinburgh.

Beautifully mounted on rollers, price 13s 9d, for *Schools, Counting-Rooms, &c.*

HEW RAMSAY.

Printing in both Languages

OR AGRICULTURAL SOCIETIES, furnished with the greatest expedition and on the most moderate terms. H. RAMSAY.

AGRICTLTURAL SOCIETY, No. 2,

OF THE

COUNTY OF HUNTINGDON.

The PUBLIC EXHIBITION will be held at the Village of LAPRAIRIE, on TUESDAY, the 23rd day of SEPTEMBER next, at NINE o'clock, A. M., when the following PREMIUMS will be awarded :—

HORSES.

	$	$	$	$	$	$
Best Stallions, 6 prizes, . . .	10	9	8	7	6	5
Best Pair of Draught Horses, 5 prizes, ...			5	4	3	2 1
Best Stallions, 3 years, 4 prizes,				6	5	4 3
Best Mare and Colt, 6 prizes, .	10	8	7	6	5	4
Best Fillies, 3 years, 4 prizes, .				5	4	3 2
Best Stallions, 2 years, 2 prizes,						4 3
Best Colts and Fillies, 2 years, 4 prizes, ...				4	3	2 1

BULLS.

Best Bull, 3 years old or upwards, 4 prizes, ...			6	4	3 2
Best Bull, 2 years, 4 prizes, .			5	4	3 2
Best Bull, 1 year, 3 prizes, .				4	3 2

MILCH COWS.

Best Milch Cow, having Calf this year 8 prizes, . . .	8	7	6	5	4	3	2 1
Best pair 2 year old Heifers, 4 prizes, ...				4	3	2	1
Best pair 1 do. do. 3 prizes,					3	2	1

SHEEP.

Best Ram, 2 shears or upwards, 4 prizes, ...			5	4	3 2
Best Ram, 1 shear, 4 prizes, .			5	4	3 2
Best pair of Ewes, 2 shears or upwards, having had Lamb this season, 4 prizes, . .				4	3 2 1
Best pair of Ewes, 1 shear, 4 prizes, ...				4	3 2 1

SWINE.

Best Boars, 6 to 12 months old, 4 prizes, ...		5	4	3 2
Best Sow, having young this season, 3 prizes, . . .			4	3 2

VEGETABLES.

Not the Produce of a Garden.

Best Bag of Mangolds, 3 prizes,		3	2 1
Best Bag of Turnips, 3 prizes,		3	2 1
Best Bag of Onions, 3 prizes, .		3	2 1
Best Bag of Carrots, 3 prizes, .		3	2 1

DAIRY PRODUCE.

Best Butter not less than 30lbs., 6 prizes, ...	6	5	4	3	2	1
Best Cheese, weighing not less than 20lbs., 3 prizes, . .				4	3	2

MANUFACTURES.

Best Piece of Etoffe du Pays, all Wool, not pressed, not less than 15 yards, 2 prizes, .		3 2
Best Piece of Etoffe du Pays, all Wool, pressed and fulled, not less than 15 yards, 2 prizes, ...		3 2
Best Piece of Linen, not less than 15 yards, 2 prizes, .		3 2
Best Piece of Flannel, all wool, not less than 15 yards, 2 prizes, ...		3 2
Best Piece of Serge, made of Wool, and Cotton, not less than 15 yards, 2 prizes, .		3 2

RULES AND REGULATIONS.

1. No person shall compete unless his subscription be paid one month before the day of Exhibition.
2. All animals (imported male animals excepted) must have been owned and kept in the County six months before the Exhibition.
3. No person shall be entitled to receive more than one premium in the same Class.
4. No female animals, having taken a first premium in this Society, can compete in the ensuing year.
5. All Horses and Horned Cattle, (sucking Colts excepted,) to be tied up according to their respective Classes.
6. The Judges are at liberty to withhold premiums where the animal or article is considered inferior.
7. All disputes are to be setttled by the Committee.
8. All animals and articles exhibited must be fed or manufactured in the County, to be verified by oath if required.

By Order,

JOHN DUNN,

LAPRAIRIE, 24th July, 1856. *Secretary.*

COUNTY OF TERREBONNE.

PREMIUMS offered by the TERREBONNE COUNTY AGRICULTURAL SOCIETY, to be awarded at a general show of CATTLE, AGRICULTURAL PRODUCTIONS, &c , of the said County, which will take place in the village of TERREBONNE, on MONDAY, the 15th of SEPTEMBER, 1856, at TEN o'clock A. M.

ANIMALS &c.

HORSES.

Open to all Competitors.

Class 27—For Mares with their Foals,
5 Premiums
Class 28—For Entire Colts under 3 years,
3 Premiums.
Class 29—For Mare Colts under 4 years,
3 Premiums.

HORNED CATTLE.

Open to French Canadians only.

Class 30—For aged Bulls,
5 Premiums.
Class 31—For Bulls under 3 years,
5 Premiums.
Class 32—For Bulls under 2 years,
5 Premiums.
Class 33—For Milch Cows,
5 Premiums.
Class 34—For Heifers under 3 years,
5 Premiums.
Class 35—For Heifers under 2 years,
5 Premiums.

Open to British Canadians, with liberty to French Canadians to enter.

Class 36—For aged Bulls,
5 Premiums.
Class 37—For Bulls under 3 years,
5 Premiums.
Class 38—For Bulls under 2 years,
5 Premiums.
Class 39—For Milch Cows.
5 Premiums
Glass 40—For Heifers under 3 years,
5 Premiums
Class 41—For Heifers under 2 years,
5 Premiums.

SHEEP.

Open to French Canadians only.

Class 42—For aged Rams,
5 Premiums.
Class 43—For one year old Rams,
5 Premiums.
Class 44—For 3 Ewes aged,
5 Premiums.
Class 45—For three Ewes 1 year old,
5 Premiums.

Open to British Canadians, with liberty to French Canadians to enter.

Class 46 For aged Rams,
5 Premiums.
Class 47—For 1 year old Rams,
5 Premiums.
Class 48—For three Ewes aged,
5 Premiums.
Class 49—For three Ewes 1 year old.
5 Premiums.

SWINE *(not fattened.)*

Open to all Competitors

Class 50—For aged Boars,
3 Premiums.
Class 51—For Boars under 4 months,
3 Premiums.
Class 52—For Sows,
5 Premiums.

BUTTER AND CHEESE.

Open to French Canadians only.

Class 53—For Tinnets of Butter weinhing not less than 30 lbs.,
5 Premiums.
Class 54—For three Cheeses weighing not less than 12 lbs., each,
3 Premiums.

Open to British Canadians, with liberty to French Canadians to enter.

Class 55—For Tinnets of Butter weighing not less than 30 lbs.,
5 Premiums.
Class 56—For three Cheeses, weighing not less than 12 lbs., each.
3 Premiums.

DOMESTIC MANUFACTURES.

Open to all Competitors.

Class 57—For pieces of Etoffe du Pays made in this Country and ready for use, not less than 12 yards,
5 Premiums.
Class 58—For pieces of Flannel made in this County this year, not less than 12 yards,
5 Premiums.
Class 59—For pieces of Linen made in this County this year not less than 12 yards,
5 Premiums.
Class 60—For pieces of Manufactured Etoffe made in this County, of not less than 12 yards,
3 Premiums.
Class 61—For 15 lbs., of Maple Sugar made by the Competitor this year,
5 Premiums.

A PLOUGHING MATCH, WITH ENGLISH IRON PLOUGHS, will take place on THURSDAY, the 16th OCTOBER, 1856, at 9 o'clock A. M , when the following Premiums will be awarded.

FIRST CLASS.

Open to French Canadians only.

FIVE PREMIUMS.

All persons having obtained the First Premium in this Class are no longer allowed to compete, except in the British Class.

SECOND CLASS.

Open to British Canadians, with liberty to French Canadians to compete.

FIVE PREMIUMS.

All persons having obtained the First Premium in this Class for two years are no longer allowed to compete.

JUVENILE CLASS.

Open to all Young Men under twenty years of age.

FIVE PREMIUMS.

Young Men having obtained the First Premium in this Class are no longer allowed to compete, but must enter with the Adult Class.

GENERAL CONDITIONS.

No Subscriber can compete except his Subscription be paid before the 15th August.

No person to receive Premiums except practical Farmers and persons holding and cultivating Farms, except the owners of Stud Horses.

No person to receive more than one Premium in the same Class.

All Female Animals competing, to have been kept in the County at least six months before any Show; and all Bulls receiving Premiums, to remain in the County untill and during the month of August, Rams until the 1st January, and Boars until the 1st March succeeding the said Show; and each Competitor to give security that in case the animal is sold out of the County before that time, he is to refund, on demand, to the Society, the amount of the Prize or Premium he has obtained.

Separate Classes are made for well managed Farms, Standing and Green Crops, Horned Cattle, Sheep, Butter and Cheese, and adult Ploughing Matches—one of the said Classes to be open to French Canadians only, the other to be opened to British Canadians, with a provision that French Canadians may compete in any of the said Classes with the British Canadians, if they wish. The British Canadian Classes will be distinguished by Blue, and the French Canadian by White Tickets.

Brood Mares must be brought with their Colts, to enable Judges more accurately to determine the merit of the animal as a Brood Mare—special attention will be given to the Foal by the Judges.

No Cow to be entitled to a Premium unless the Judges are satisfied that she has produced a Calf, or that she is in calf, at the time of Show—a similar rule will also apply to Sows and Ewes.

All persons receiving Premiums for Male animals shall not refuse to Subscribers the use of the said animals to a reasonable number of applications, not to exceed the following prices for the season, to Members: Stallions, 15s.; Bulls, 2s. 6d.; Boars, 1s. 3d.; Rams, 1s.—an extra 6d. per week to be paid for pasture in summer, and 10d. per week for fodder in winter for each Ewe.

All Female Animals having once obtained a First Prize will not be allowed to compete for the future, with the exception of Brood Mares.

All animals of the same class to be kept together on the same ground, so that the Judges may better determine their comparative merits.

All Ploughmen to compete with their own Ploughs, Horses and Harness, except sons of Subscribers, or servants hired for not less than 3 months—the sod to be settled either by the Plough or the foot of the Ploughman, as the Plough works, as no other assistance whatever will be allowed; each Subscriber not allowed more than one Plough.

All disputed points to be decided by a majority of the Committee.

The decision of a majority of the Judges to be final, who shall affix the Prize Ticket on the animal or article exhibited; and successful Competitors are requested to report immediately to the Secretary.

All Horses, Cattle, Produce, &c., to be entered with the Secretary before 10 o'clock A. M., on the day of Show, and if not entered by that time they shall not be entitled to compete, and this rule will be strictly enforced.

All unsuccessful Competitors will be entitled to the amount of their subscription in grain.

ALPHEUS KIMPTON, *President.*

CHARLES SMALLWOOD, M.D.,
Secretary-Treasurer.

Terrebonne, 11th July, 1856.

NEW GUIDE BOOK.

Just Published.

THE CANADIAN TOURIST, accompanied by a MAP of the British American Provinces, with an APPENDIX, containing useful STATISTICAL INFORMATION.—Price 5s.=$1. THE TOURIST is a complete Guide to all parts of the United Province—the MAP shows the various Townships, Lines of Railway now open or in progress, Route of the proposed Ship Canal to Georgian Bay and the adjacent country. The Appendix contains the CENSUS, Exports and Imports, Revenue, Public Works, Railway, Tables, &c.

Montreal: H. RAMSAY.

Single copies can be sent by Mail.

Notice to Farmers.

THE MUTUAL FIRE INSURANCE COMPANY of the County of Montreal, insures the properties of farmers in Lower Canada, at 5s. for £100 currency, for 3 years, &c.

Apply at the office, *St. Sacrament Street*, Montreal; to the Agents in the Country; or to the undersigned Directors:—

Wm. Macdonald,	Esq.,	President, Lachine.
B. H. Le Moine,	"	Montreal.
Edward Quin,	"	Longue Pointe.
F. M. Valois,	"	Pointe Claire.
John Dods,	"	Petite Cote.
G. G. Gaucher,	"	Ste. Genevieve.
Frs. Quenneville,	"	St. Laurent.
Joseph Laporte,	"	Pointe-aux-Trembles.

P. L. LE TOURNEUX,
Secretary and Treasurer.

Montreal, 1st July, 1854.

Montreal Savings Bank.

A PERIOD OF THIRTY-SIX YEARS HAS elapsed since an association was formed in this City, under the designation of the "MONTREAL SAVINGS BANK," with the view of affording to the community the important benefits arising from such Institutions.

The undersigned, the only surviving acting parties connected with the Bank, anxious to be relieved of its management, and at the same time desirous that the public should not be deprived of the advantages which it has conferred, have EFFECTED AN ARRANGEMENT WITH THE BANK OF MONTREAL, by which that Institution has become responsible to Depositors for the balances due to them and will receive Deposits in the same manner as the Montreal Savings Bank has hitherto done.

The undersigned have every confidence that this arrangement will be satisfactory to the Depositors and also to the community.

S. GERRARD, *President.*
J. FROTHINGHAM, *V. P.*
J. T. BARRET.

Montreal, March 29th, 1856.

The Savings Bank Department

OF THE

BANK OF MONTREAL

WILL be OPEN DAILY, between the hours of TEN and THREE, under the immediate charge of Henry Vennor, Esq.

By Order.

D. DAVIDSON,
Cashier.

Montreal, 30st March, 1856.

1856.

THE COUNTY OF MONTREAL Agricultural Society,

OFFERS the following Premiums for the following Crops:

ENGLISH CLASS.

		Shillings.				
Potatoes, 6 Prems.	50	45	40	35	30	25
Carrots, 5 do.		40	35	30	25	20
Mangol Wurtzel, 5 do.		40	35	30	25	20
Turnips, 3 do.				30	25	20
Indian Corn, 6 do.	40	35	30	25	20	15
Horse Beans, 3 do.				30	25	20
Summer Fallow, 2 do.					30	20

For General Competition.

The Best Surface Drained Farm, 2 premiums, . . .					30	20

RULES AND REGULATIONS.

A Field of Four Arpents, at least, will be required to entitle a Farmer in this Class to compete for Potatoes and Summer Fallow.

One arpent for Indian Corn.

One arpent for Beans.

Half an arpent for Turnips, Carrots, Mangol Wurtzel, the whole to be Field Culture.

No person allowed to compete unless a Member of the Society.

No Premium to be given unless Farm is free from noxious weeds.

The parties to whom First Premiums are awarded, shall report to the Society, the system adopted in the production of the crops.

That such Premiums shall be paid only upon Interrogatories being answered, and Circulars returned filled up, addressed to the Secretary-Treasurer.

This Rule will be enforced strictly.

Notice of Competition to be give to the Secretary-Treasurer on or before the 20th July next.

By Order,

JAMES SMITH, Sec.-Treas.

Montreal, 1st May, 1856.

Lower Canada Agricultural Implement Warehouse

AND

SEED STORE,

St. Ann's Hall, over the St. Ann's Market.

THE SUBSCRIBER has just received from FRANCE, a considerable quantity of FIELD, GARDEN and FLOWER SEEDS, amongst which will be found several kinds of CLOVER and other SEEDS never before introduced into this country. He has also on hand every variety of SEED GRAIN, all of which will be found pure and unmixed.

The IMPLEMENT BRANCH will comprise every thing necessary for the Farm, Garden, and Dairy.

The Subscriber would also intimate that he has been appointed Agent in this district for the extensive manufacturing house, known as the "Faris Furnace Co." of Clayville, New York. And has now on hand a considerable quantity of their Agricultural Implements, they are of superior quality, and will be disposed of by wholesale and retail on liberal terms.

WM. EVANS, Junr.

Genuine Peruvian Guano and other Fertilizers.

Montreal: Printed and Published by H. Ramsay, No. 37, St. François Xavier Street.

The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 5, Montreal, September, 1856. POSTAGE FREE. Price 2s 6d per annum, in advance.

The Farmer's Journal.

Provincial Exhibitions.

Do not forget the Provincial Exhibition at Three Rivers, on the 17th of this month, and following days. It is time that every farmer were asking himself,—What have I to send? Do not withhold anything that is worth sending. The prize is not the only consideration. The credit of the country is at stake; and nothing will more promote improvement than that farmers should be able to show each other the best that Canada can produce, and that best as good, if possible, as any part of the world can produce.

We trust also that the productions of Eastern Canada will figure respectably in the Kingston Exhibition, which opens on the 23rd instant.

———:o:———

Prize Essays.

From an advertisement which appears in another column, it will be observed, that the Bureau of Agriculture offer three very handsome Premiums for the three best Essays, respectively, "on the Origin, Nature, and Habits, and the History of the Progress, from time to time, and the Cause of the Weevil, Hessian Fly, Midge, and such other insects as have made ravages on the Wheat Crops of Canada, and on such Diseases as the Wheat Crops have been subjected to, and on the best means of evading or guarding against them."

We trust, that this wise step on the part of the new Minister of Agriculture, may lead to the production of several useful Treatises which should be scattered broad cast over the Province. To assist in so desirable an object, we freely offer the use of our columns—in both the French and English editions.

———:o:———

We beg to direct the attention of persons desirous of settling on new farms, to the very liberal terms offered by Government in the advertisement in another column. These facilities are no doubt of especial importance to immigrants from the old world, but they are also well worthy the consideration of young men in this country, who may be content to hew out a farm from the wilderness, and cannot easily effect a settlement in the older agricultural districts.

———:o:———

County of Jacques Cartier.

At a public meeting of the inhabitants of this County, held at La Pointe Claire, *chef-lieu* of the said County, on the 8th July last, to provide for the organization of an Agricultural Society for the County of Jacques Cartier.

M. F. Valois, Esq., M.P.P., was called to the chair, and N. M. LeCavalier appointed to act as Secretary.

The President explained the object of the Meeting, which was to organize a new Society according to the provisions of the New Agricultural Act, passed in the last Session of Parliament.

The meeting was very numerous, and several persons present subscribed, and then they proceeded immediately to the election of Office-Bearers for the present year, as follows:—

M. F. Valois, Esq., M.P.P., President; Dr. Frs. Pilette, Esq., of Ste. Genevieve, Vice President; N. M. LeCavalier, Secretary-Treasurer.

Directors:—M. M. Charles Brunet, Joseph Robillard, James Smith, Hyacinthe Paquin, François Viau, Remi LeCavalier, and Jean Bte. Quesnel.

The election of Office-bearers being made, the Directors resolved to enrol new Members in their respective localities, and to meet again on the 29th July instant, after which thanks were voted to the President, and the Meeting broke up.

By Order,

M. F. Volois,
President.

N. M. LeCavalier,
Secretary.

July 14, 1856.

———:o:———

Value of Liquid Manure on Meadows.—*Messrs. Editors*—I wish to say a word about top-dressing meadows with liquid manure. I built a vat which holds about twenty-five hogsheads, so placed that I could drain into it all the liquid from the stables, yard and privy. All dead carcases may also be put in, if not too large, by putting some lime in with them which will prevent their being offensive. The liquid is distributed in the same way as streets are sprinkled with water in the cities. A chain pump is the best and cheapest way of getting the liquid from the cistern.

I went over a lot, that three years ago was not worth cutting, three times, and now it produces about three tons of hay per acre. I think every farmer ought to have such a vat, as he thus saves a great amount of valuable manure which now in most cases is wasted. —*Cultivator.*

Dear Labour and Cheap Land Versus Improved Farming.

(Concluded.)

That we may not be too tedious, we shall endeavour to condense our remarks on those improvements that demand increased labour, and on the cheap substitutes for these, into a single article.

Subsoiling and trench ploughing are great improvements, and much required, by much of our older land. Under-draining is another; and skilful manuring is the crowning and greatest of improvements. In short *draining* the land so that it will work early and well, and will endure drought without baking, and rain without being water soaked; *tilling* it well and deeply, to expose it to the air and to loosen it for the roots of plants; and *manuring* it well so that the crops shall have abundant food, are the three pillars of husbandry; and must support all other improvements, else these sooner or later must fall to the ground. But many farmers, though admitting all this, have a very serious objection, the expense of labour, and the impossibility of effecting these things without a ruinous outlay for hired help. Now if this is a valid objection, as we have said before, Canadian farming is a doomed thing. If it will not pay for the only pillars that can anywhere support farming, it must fall. We believe on the contrary that even dear labour, judiciously employed in this way, will pay. Our belief is founded on observation and experience, and we shall try to give two examples in illustration of what we mean.

Over a large part of the older districts of Lower Canada, a traveller cannot but admire the great breadth of level cultivated land, the straight fences and neatly kept ditches, the fine trees scattered over the face of the country, the snug white homesteads, and the large fields neatly laid down to grain crops. All these things bespeak neatness, industry, and taste. But on these same farms one may see piles of manure that have been neglected for years, fields that have been cropped with grain and allowed to run out into weeds and natural grass, and patches of grain so short in the straw and light in the head, as to indicate a very poor condition of the soil.

On such farms the manures are neglected, the ploughing is very shallow, the drainage is imperfect; and to make up for these defects the farmer ploughs a large surface, takes what it will bear, and leaves it to nature till it has "rested" sufficiently to bear another crop a little poorer than the last. But in proportion to the extent of the neglect of the manures, so is such land becoming less and less productive. Now if any one were to take one of these farms, drain it well, with wood, tile, or stone drains, subsoil plough it, and carefully save all the solid, liquid, and home manure, perhaps expending a few pounds per annum in the purchase of guano, there can be no question that in a few years it would assume a new aspect. These improvements would require much additional labour to be employed, or they must be effected by withdrawing a portion of the labour from the extension of the breadth of crop. Suppose additional labour to be employed; it is used in effecting improvements that are durable, and that prolong or extend the fertility of the land. Such improvements may not pay their cost in the first year, but they continue to yield a revenue for many years, and make subsequent labour more productive. Or suppose the same amount of labour as formerly to be employed, then the surface under tillage must be diminished and greater returns trusted to from a smaller surface. In either case, labour ju iciously expended on these three things, better tillage, better draining, better manuring, must pay; but we will not promise that if expended in fine buildings, or in following at random every recommendation of every agricultural paper, it will pay as well.

Such amelioration of an old farm can be best effected by degrees; by attending to the permanent improvement of a small surface at a time, and in the mean time treating the rest in the usual way. Thus an inroad on the bad f rming will be made gradually and at little expense, and the produce will year by year be increased, and with it the capability for maintaining improved and increased stock, and entering by degrees into all other improvements.

Our second case shall be simpler and shorter. We often see the farmer going a-field day by day through a barn yard in which wealth is going to waste nearly as fast as his industry accummulates it. Around his barn lie the remains of successive crops, bleached by the rain and sun. Every shower carries off those substances, that if on the field would be converted into crops, every wind wafts into the great atmospheric storehouse of nutriment for all plants, that which of right belongs to this farm in particular. We often think what a waste of labour is here. Labour is employed is ploughing, in harrowing, in sowing, in reaping, in gathering into the barn, in threshing; and results valuable to man and beast are obtained; but just as in many manufactures the residuum or, as we might say, the refuse, is that on which much of the profit depends, so with the farmer; and that which by the operations of collecting and carrying back to the fields would be converted into increasing wealth, is left to waste, until for want of it the farmers barn's can no longer be filled. In short, from not preserving the liquid and solid manure and restoring them to the soil, much of the labour expended is thrown away, and its returns annually become less.

But, say some farmers, we do not wish to be troubled with manures; we will fallow, we will plough in green crops, and so we shall have wheat forever. Just as reasonably expect your horse to work on forever under the influence of the spur, without food. Fallowing may turn to immediate account more of the mineral matters of the soil than would otherwise be available, green crops ploughed in, add a quantity of organic matter from the air, but neither can replace the substance of the soil taken off by crops and not restored.

Our grand moral here is, that labour must be expended, first on the essential processes necessary to fertility, and that it is by doing this first that where labour is dear, other things can be added.

In conclusion, where labour is too scarce to permit all to be done that may be done in preparing and manuring the soil, modern enterprise has furnished one resource in the portable manures. On run out, or nearly run out lands, guano and the phosphates, incorporated with the soil or mixed with earth, and applied as top-dressing, are sure to be profitable; and we even believe that by the occasional ploughing down of green crops, with the annual application of guano, the dream of permanent fertility, without rotation and stable manures, might be realised. This at least is an admirable method for lands which the farmer cannot through scarcity of labour otherwise treat; but it will not do without the guano.

———:o:———

To Destroy Caterpillars.—A gentleman from Saugus, whose name we have forgotten, informs us that he has found the use of molasses very effectual in destroying caterpillars; that when they are in the nest he has smeared it over with molasses, and that none have ever escaped from it;

that they cannot travel over a limb where the molasses has touched, and that it does not in any way injure the tree, and that upon the whole, he likes it better than lighted torches, gunpowder, soap-suds, whale oil soap, or even the thumb and finger! A cheap and easy remedy. Let the molasses "work."—*N. E. Farmer.*

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Pulverising the Soil in Drought.

We have just read an article on this subject from the Southern Cultivator, detailing experiments which seem to prove that the common belief that stirring the soil is beneficial in time of drought, is incorrect. The experiments showed that in damp weather and dewy nights, stirred soil collected moisture more rapidly than unstirred; but that in dry days it lost more rapidly. The Editor of the cultivator, after summing up the results, adds the following as practical conclusions.

1. All sandy soils, or those which are always mellow and which never crust in the least, are made drier by frequent stirring in summer; and the operation should be no oftener performed than may be necessary to keep the soil perfectly free from weeds.

2. All soils, containiug more or less clay (and as a consequence liable to become hardened) should be worked often enough to keep up thorough pulverization, which will be less frequent for the under portions, and more frequent for the surface—the pulverized earth at the top preserving the moisture below, in the same way that a coating of sawdust or of tan is found to operate in mulching.

3. Any soil, *after* being brought to a state of complete pulverization, is made drier by being repeatedly turned up to the sun's rays; but as a crust forms on the surface after any shower or heavy dew, the oftener this crust is broken by stirring the surface the better. And it is decidedly better to plow deep and frequently, than to wholly omit cultivation and allow the surface to become hardened.

To these we may add the following advantages of stirring the soil. 1. It affords a better surface for collecting any moisture that may fall. 2. It intercepts the capillary action by which moisture is drawn up from the subsoil. 3. It diminishes the action of the sun in heating the ground. 4. It allows the circulation of cool air in the soil, which when open is penetrated by the damp night air, displacing by its greater density the air that has been heated in the soil.

All these effects are prevented to a great degree by a "crust"; and consequently soils liable to assume this condition in dry weather have the greatest need of frequent stirring.

Agricultural Education.

In another column, will be found the advertisement of the Agricultural Course of the McGill College, Montreal. It is well to find such advantages offered to young farmers; and we hope they will not be slow to avail themselves of them. It will be observed that the fee is low, that the course commences at a very favourable season, and that any young man who attends the class in agriculture, may also have the benefit of other useful classes, tending to elevate his general intelligence.

Some of our agricultural friends, may be disposed to ridicule the idea of young farmers coming into Montreal to learn farming, in the winter when all agricultural operations are suspended; but we would remind these that agriculture is not only an art but a science. While its practice must be learned in the field, its most important principles can be studied with advantage in the class room. There information can be given respecting the practice of other countries—there the views entertained on controverted topics may be discussed—there the chemical and physiological groundwork of the art may be taught. The young farmer may go forth from such a class with a higher appreciation of the dignity of his profession, well prepared to form his own judgment on the application of any process or substance to any set of circumstances, and able to understand and appreciate the best agricultural and scientific works, and to explain and support his views in his intercourse with others. In short, every young farmer so instructed will not only reap the profit on his own farm, but become a centre of agricultural light to his neighbours.

We trust that many of our more wealthy farmers will give their sons the advantage of spending the winter in the city to attend this course; and that all those interested in agricultural improvement, and within reach of the class room, will give it their countenance. It is most desirable that those who have had the courage to make this important experiment, may be supported as they deserve.

We are authorised to state, that the first lecture will be open to the public, and that farmers who may happen to be in town on any of the days of lecture will be welcome visitors.

——:o:——

Seasonable Suggestions.—August an observing writer says, "is that debateable ground of the year, which is situated exactly upon the confines of Summer and Autumn; and it is difficult to say which has the better claim to it. It is dressed in half the flowers of the one, and half the fruits of the other; and it has a sky and temperature all its own, and which vie in beauty with those of the Spring." August is the old age of summer—beautiful in its age, and unlike any other month. Along with it comes new tones of the insect world, both by night and day. New hues invest the plants, as the almost unvarying green has changed to a still richer and more conspicuous gold color, constrasted with the leaves of green with which it everywere lies in contact. The sickle has been, or now is, busy with many of the plants which have come to perfection, and the golden sheaves have been borne away. Summer is rapidly waning, as every sight and sound declares. The pressure of the hay harvest is over, though meadows and second-crops are still behind to swell the value of this important product.

If July has been a dry month, August will present a good time to construct water-cisterns, with which every farm establishment should be provided in a conveniently located place. If the farm buildings are numerous and compactly situated, a small expenditure will suffice for the construction of all the apparatus necessary for conducting the water from the roofs into the reservoir, which, for greater convenience, should be located in some place where it may subserve the wants of the animals occupying the yards in winter, as well as the household. The convenience and value of such an arrangement will be particularly obvious during seasons of protracted drought, or accidents from fire.

Good and substantial reservoirs—perfectly water tight, have been formed of split stone, brick, and even plank, the interior surface, as well as the bottom, being coated with cement. But they may be made without the use of either of these materials, by laying the cement directly on the surrounding earth. These cisterns should be "decked over," and made perfectly tight, and furnished with efficient pumps. The expense, contrasted with the advantage, is small, and as they last for many years, no one who studies his own convenience and the comfort of his stock—to say nothing of the security of his property and his family—will be disposed to consider capital invested in this way, otherwise than judiciously and profitably laid out.

During this month, the strawberry beds will require some care, if we wish to find them in a condition next spring to produce a liberal crop. It is not only necessary to keep them free from weeds and the ground in a well cultivated condition, but if the month be a dry one, they should be liberally watered once or twice a week, and the *runners carefully cut away*. If the runners are allowed to spread as they please,

they will cover the ground, and in the spring your bed will probably present such a mass of weeds and plants as to defy all your patience to set them right again. Many a patch has been abandoned in despair when found in this condition.

Young trees that were budded last year must be attended to, and kept clean and well cultivated, and the numerous shoots that spring out from the main stem carefully cut away, allowing the vigor of the tree to go to the young scion. This, however, must be attended to at an earlier date, as well as in August.

One other suggestion for August, and we will leave the reader to seek his fields and crops. Many persons complain that their hens will not lay, and that notwithstanding their assiduity in furnishing them with all the articles ordinarily recommended to ensure fecundity, the eggs they produce will not "half pay the expenses." Now we presume their is *something* lacking, or the fowls would certainly not run their owners in debt. It is not generally understood even by those who *profess* to be the most deeply versed in the mysteries of 'Henology," that the hen, being omnivorous, requires, to ensure fecundity, a very liberal allowance of *meat!* When enjoying her liberty in the fields, pastures, or door-yards, the principal part of her sustenance is derived from insects, worms, &c. She partakes but sparingly, at such times, of grain, and often when that article is supplied, leaves it for the more inviting food which nature supplies her with, in her favorite haunts. Now if we confine her where the natural propensity for this description of food cannot be gratified, even though we supply the best of grain, and in abundance, she will cease to lay. The privation affects her health, and there will necessarily be an end of *profit*, until the deficiency is supplied. When fresh meat or fresh fish cannot be obtained, the common scraps of the butcher, which are hard and compact, and can be kept any length of time, answer all the desired purpose.—*New England Farmer.*

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Improving Grass Lands and Grass Crops.

There are several considerations which make all inquiries, suggestions, and experiments relating to improvements of our grass lands, matters of considerable importance and well deserving of attention. Among these considerations is the fact that the grass crop of the United States is one that occupies fully more acres than any other, and that it is one of the most valuable of the crops of the whole country, while in some of the States its money value is greater than that of any other crop whatever. Any suggestion which should promise to add to the value of this crop, by diminishing the labor connected with it, by making a less quantity of land productive of the same amount of fodder as at present, or by improving the quality of grass, is entitled, certainly, to candid consideration and fair trial, inasmuch as the interests of this one and that one, and of the public at large, are likely to be more or less favorably affected thereby. Within the circle of our readers and of those whose farm operations would almost certainly be influenced by the opinions, conversation, and modes of management of the circle of intelligent and inquiring farmers whom we address, some one suggestion of an improvemeut in regard to the grass crop might prove of the value of a few dollars to several individuals, and of the value of thousands of dollars to the whole collectively. If, therefore, any of our readers have become satisfied by experimental trials or otherwise, that they are in possession of any item of knowledge which would *diminish* the *cost* of this crop in land, labor, keeping up fences, &c., or which would *increase* its *value* by improving the quality of the grass and thus also the quality of the dairy products made from it,—they have an opportunity of doing good on a pretty large scale, if they will take the trouble of communicating the information in their possession to their brethern at large,—a mode of doing good which, while it makes the receiver richer, does not make the giver, in any respect, or in the least degree, poorer.

As a contribution towards diminishing the cost of this crop, or the amount of labor, capital, &c., employed in its production, and, also, towards increasing its value by improving its quality and the quality of the dairy products dependent upon it, we have a few suggestions to submit, in the hope of their leading, more or less immediately, to improvements of no small value. We submit the suggestions which we are about to make, more for the purpose of directing attention to a few of the points in the culture of grass and management of grass lands which seem to admit of improvement or call for it, than for the purpose of laying down any rule which may be followed with confidence, as if it had acquired a well established authority. The plans we are to propose may not be suitable in all cases, but while, with ordinary judgment, they will mislead no one, they may lead to trials which will result in increasing the small amount of well-ascertained and reliable knowledge of which we are, at present, in possession.

The methods commonly followed in seeding grass lands fail of full success so frequently as to be productive of considerable loss in time, in labor, and in amount of annual produce. Here, certainly, there is room for some improvement.

The method most generally employed consists in sowing the grass seed with a crop of oats or of barley in the spring. In this way failures are not uncommon, either entire or partial. Nor are such failures surprising or hard to be accounted for. The more rapidly growing grain crop uses up the most easily assimilated nutriment in the soil, leaving to the more feeble plants but a scanty supply, while at the same time the more advanced crop deprives the less advanced one of the healthy stimulus of sunshine and a free circulation of air. The grass plants, in a word, are shaded too much, and are consequently feeble and fragile, while at the same time they have but scanty supplies of nutriment, as their neighbors, the grain plants, take to themselves the lion's share of the spoil. When the grain crop is harvested, and these sickly and blanched plants are exposed to the scorching sun, they are often overpowered and destroyed. There are probably not as many failures of this kind with barley as with oats, as the former does not send off so many off-shoots as the latter; still there is considerable risk of failure, to a greater or less extent, with either of these grain crops. And when a failure does occur, of course there is loss and disappointment. Here, then, an improvement is called for, and some few attempts have been made to answer the call.

To avoid the failures so common when grass seed is sown with spring grain, some have sowed it among corn, at the last hoeing in the latter part of July, or in August. After hoeing and stirring the soil, which is left flat or without being hilled up, the grass seed is sown and raked in. The plants have, in this case, a good chance for an early start and thrifty growth. The ground is generally rich or well manured, also mellow and moist, and the corn shades the young plants only enough to protect them from injurious scorching. Thought his method has some advantages, it has also some disadvantages, such as the trouble of sowing and raking seed among the rows of corn, and that of having the lower ends of the stalks in the way of the scythe and the rake in hay harvest.

Another method has been to sow the grasses alone on a well-tilled and well-manured soil, in August or September. This, so far as reported, has been generally successful. Quite recently a practice has been introduced of sowing turnip seed along with the grass seed in July or August. The leaves of the turnips have been supposed to be particularly useful in shading the young grass plants at their first start. To those who hear of this plan for the first time, it will readily occur as an objection to the practice of adding turnip seed to the grass seeds, that wherever turnips grow a spot bare of the grass must be left. Those who have tried the plan, however, assert that it is not so in reality. The grass is said to do as well or better than when alone, while a crop of turnips is obtained at the mere cost of gathering them. If the harvesting of the turnips should leave the ground uneven, it may be made smooth by the use of a roller at a suitable time in the spring. In one part of Massachusetts this latter practice seems not uncommon. When the farmers wish to seed down a field, they plant an early kind of potatoes, dig them in August, and then sow with grass and turnip seeds. In this way they get a crop of potatoes and

turnips in the same season, and a good crop of grass during the succeeding year.

To determine certainly and authoritatively how far any of these more lately-introduced and comparatively rare modes of seeding, are improvements upon the more common practice, and which of them is upon the whole preferable, will require that comparative trials should be made in a variety of circumstances, and on a variety of soils. We think the practice of seeding in July and August, or even in September, either with or without turnips, is likely to be found much less liable to failures than seeding with oats or barley in the spring. Sowing grass seeds *alone*, and in *large quantity* will, probably do best.

[We cannot insert the above valuable article without a few remarks, on points which we conceive to be too little dwelt on by the writer.

We hold for instance that oats, barley, and spring wheat, have very different effects on the grasses sown with them. The oat shades the soil and exhausts it of the essential food of the grass. Barley and wheat have much less influence in this way. Hence the best farmers sow down grass with barley and wheat, but never if they can help it with oats.

Again, nothing can be more destructive to grass than the close mowing which it often receives with the grain in autumn. This destroys its leaves, tempts it to weaken its roots by throwing out new leaves in autumn, and renders it unable to endure the frosts of winter.

For this reason grain with which grass has been sown should be cut with a long stubble, which has the additional advantage of affording shelter, and retaining the snow over the young grass. For similar reasons cattle should not have access to the young grass in autumn.

Lastly, Shallow and undrained soils are less suited than others to the growth of grass with grain. Deep ploughing or subsoiling, and attention to drains, have a two-fold influence over the young grass. They allow it to form deep and strong roots, and they render it less liable to be thrown out in winter. In the case of clover especially, drainage, and the use of lime and gypsum in soils not naturally calcareous, are of the utmost importance.

We have no doubt that attention to these points, along with proper manuring for the previous grain crop, will go far to remove any uncertainty attending the sowing of grass seed with grain.]—Ed. F. J.

Agricultural Report for July and August.

The month of July was generally dry, and many days excessively hot. Rain has fallen occasionally in some localities, but in many places there was scarcely any rain for the three last weeks of the month. The consequence was, that the hay crop, in the neighborhood of Montreal, as well as in many other sections of the district, has not turned out so abundant as was anticipated in the beginning of June. Old meadows in particular, are deficient in produce. The two last years old meadows were injured by drought in summer and frost in winter, and I do not think they will produce good crops of hay, until ploughed up, put through a regular course of rotation, and seeded down again. Perhaps, where there are not very many weeds, it might be possible to improve them by harrowing the surface well in the Fall or Spring, sowing grass seed upon them, top-dressing with short manure or compost, and again harrowing with a light seed or brush harrow. I have considerably improved old meadows by this process, but the work must be carefully executed, and at the proper season. So far as my information extends, the general character of this spring and summer, has been unusually dry, and for the last month excessively hot. I have seen a drain perfectly dry this year, that has not been so any summer since 1826. When the soil becomes very dry in summer, it requires a great quantity of rain to soften it, particularly if under grass,—and if the crop of grass on meadows is not constantly improving until cut, it is sure to diminish and deteriorate, every day it remains uncut,—from the time it ceases to improve. Wheat sowing was generally deferred until the last week of May or the beginning of June, in order to escape the wheat fly; and, at this period of its growth, it is not possible to estimate with any degree of certainty what the produce may be. I believe, notwithstanding the drought, the crop made very favourable progress, up to the commencement of the heavy rains we had on the 3rd of August, continued with little intermission up to this time. Whether this change in the weather will produce rust or mildew in the wheat crop, I cannot pretend to report, but from past experience, that is a result to be apprehended, and that is the risk in late sowing of any grain crop. Some farmers have ventured to sow wheat early this year, and I understand that the crop is very little injured by the fly. Upon this farm Fife wheat was sown on the 18th and 24th of April for experiment, and although the month of May was cold and backward, and unfavourable for vegetation, the crop is now harvested and scarcely injured by the fly, except in some ears of a different variety that happened to be mixed with the seed, and these ears are only injured in the extreme top.—This experiment convinces me, that early sowing, if possible to execute previous to 21st April, will be the best period for sowing spring wheat, and that the pure Fife and Black Sea wheat will be the best varieties to sow of any yet known in Lower Canada. I suppose many Agriculturists have ascertained this fact to their own satisfaction: but those who have not, may rely upon the experiment which I report, as having been fairly made this year, on land of light quality, well drained, but not underdrained, and no manure was directly applied to the crop. I know, by past experience, that it is frequently possible to sow wheat and other grain in Lower Canada previous to the 21st of April, on land properly prepared the previous fall. I have sown wheat as early as the 1st, the 4th, and the 7th of that month, three different years, and while we had only spring wheat that required four months to mature from the time of sowing, it was considered to be too late to sow after the end of April. Now that we have got wheat that only requires three months to mature from the time of sowing, early sowing would be very advantageous, and save the crop from much risk by rust or mildew, which is so frequently the consequence of late sowing when we have such weather as experienced for the last fortnight. In fact early sowing is advisable for every crop we cultivate. Our spring never commences until April, and often not until nearly the end of that month. As our seasons must, consequently, be short, we should consider that the last day of May should terminate the season of spring, and the time for executing the spring work, otherwise our crops will not have a fair chance of the growing season. If the time of sowing and planting is allowed to extend into the summer, the crops have not the full advantage of the season, though short it is, to come to perfection. Short seasons are urged as an objection to Lower Canada, but I think not very justly. The skilful Agriculturist will be able unless very rarely to manage his business so as to produce good crops, and in good season. We may not always produce a general crop of wheat equal to Agriculturists South or West of us, nor of Indian corn, but I have no hesitation in saying that L. Canada will yield an average acreable produce, including every variety of crop cultivated, together with meadow and pasture, equal to, if not of greater value annually, than any other agricultural country in North America. I presume that this proposition may be questioned, but I am confident I should be able to prove it satisfactorily. I admit that Agriculture is in a backward state in Lower Canada; but we have numerous examples of good husbandry to show what the country is capable of, and even in its present state, generally, it is not much inferior to the general state of Agriculture South or West of us. There are numerous defects in our system of husbandry; but defects exist eslewhere, though

perhaps, not exactly of the same description, but equally contrary to the rules of good husbandry.

It is unjust to the country to say that our spring is so late, and our summer so short, that we have not a fair chance of producing good crops. We must adapt our system of husbandry to our climate and circumstances of the country; and if we are prevented from ploughing for several months in winter, it requires increased activity and industry in the spring, summer and fall; and we should not forget to be thankful, that even in winter the frost and snow act most beneficially upon the cultivated soil of the agriculturist, who ploughs and drains his land in a proper manner. The farmers in England would be very glad if they could have the advantages we derive from the frost and snow of winter upon the ploughed soil. We must be prepared to do the work in seven or eight months which they have ten or twelve months to execute in other countries; but seven or eight months afford us a much greater number of working days than the same number of months does in other countries, where there are many rainy days. We may have disadvantages to contend with, but so have they in other countries; and although not of a similar character, they may be equally injurious to the agriculturist. By sowing and planting in the season of spring, we shall have all the summer for bringing crops to perfection, and by an early harvest we shall have a chance of more favourable weather and longer working time; and be able to commence our fall work sufficiently early to complete it in a proper manner, which never can be done if we have a late harvest, that occupies all our attention until too far advanced in the season to admit of the judicious completion of the ploughing, draining, &c., which should be done in the fall, if we expect to sow and plant in time, or in a proper manner, in the spring.

These observations may perhaps be considered as out of place in an agricultural report of the crops; but they are submitted from a good motive, and I hope they will obtain the serious consideration of agriculturists.

The late rain commenced when our barley harvest was in full operation, and that crop generally at maturity. No doubt extensive injury has been done to this crop. During my long residence in this country, I have never known barley to be so much injured in the neighbourhood of Montreal, and I believe the damage extends to a large section of Lower Canada. It is not the great quantity of rain that has fallen, that would be so injurious, but the many days of rainy weather we have had, so unusual at this season of the year. The barley crop was very promising this year up to the unfavorable change in the weather; and though our barley may not be so large in the grain as choice samples in England, yet it is generally sound, dry and of more value than its apparent size, compared with that produced in a moister climate would indicate. Peas have also been very much damaged from the same cause as the barley. Both being generally prime crops in Lower Canada, the damage they have sustained will be injuriously felt by agriculturists. There was not much of the oat crop at maturity, but where oats was sown late, and of luxuriant growth, it is very liable to be damaged by rust or mildew in such weather. The hay harvest was far from being finished when the rain commenced, and any cut down and not properly secured must be very much damaged. I am sorry to have to report unfavorably of any part of our crops, and as some compensation for the losses sustained by the late rain, root crops and pastures have derived great benefit from it, for they were suffering very much for the want of it. The rain, therefore, cannot be considered as a decided injury without producing any benefit, and perhaps if the general effects of the late rains could be correctly estimated, the benefits produced would fully compensate for the damage done. I have not reliable information that there is any indication of disease in the potatoe crop up to the time the rain commenced, bnt should moist weather continue, it would be almost sure to produce the disease in this useful crop; other root crops cannot fail to make good progress, if they are kept clean, these may be considered sure crops with the exception of the turnip which is very liable to be damaged by what is known as the turnip fly or beetle, which devours the plant the moment it appears green over the ground. The young plants often disappear from this cause, before the owner has an opportunity of seeing them, and then he condemns the seed as being bad. The most effectual remedy against this troublesome insect, is sowing early, and if farm-yard manure is employed to work it thoroughly with the soil, and not to apply it directly in the drill immediately before sowing the seed. It is a great advantage to sow turnips and all other small seeds when the soil is freshly prepared or immediately before or after rain, if the soil is not too wet. Great care should be observed to put the seed in at the proper depth, and not too deep or too shallow. Carelessness in sowing is frequently the cause of the failure of the crop, when the seed is good. If seeds come up in some parts of the drill and not in others, it must be the fault of the sowing. This year insects and grubs have injured both carrots and mangold wurtzel. It is rather an extraordinary circumstance, that there are very few grass-hoppers this year, though caterpillars and other injurious vermin have been in abundance all the spring. The orchards in the neighbourhood of Montreal will not yield a large crop of apples this season, whatever they may do in other sections of the country. The pastures became so bare in consequence of the drought, that dairy produce brings a high price in our markets, but the late rains will improve the pastures and the after grass, and increase dairy produce and feeding for stock. It is, I believe, a well established fact, that the live stock either in Upper or Lower Canada are not in due proportion to the land occupied and in cultivation, and this is a great defect in any system of agriculture, and also a great loss to the agriculturists. The present prices of all descriptions of farm stock would pay amply, and if live stock are not kept in due proportion, good or profitable farming is out of the question.

The management of the dairy is of great importance, so that the produce shall be abundant and of excellent quality. I have heard parties complain of butter they had purchased in casks, that there was much more salt than was necessary to preserve the butter; and, in fact, that salt formed a large per centage of the whole weight of the cask, a proportion that appeared almost incredible to me. This is a most objectionable practice, whether adopted by jobbers in butter who buy it in small quantities and repack it in casks, or by the farmer who makes it from his own cows. But I would suppose such butter would not pass inspection, except as of very inferior quality. Butter packed in casks should be of uniform colour and saltness, and packed closely throughout, without any openings or vacancy left between the layers of butter. The whole cask should appear as of one churning, and all packed at the same time and as closely together as possible.

The late rains will unquestionably have produced considerable damage to parties engaged in harvesting barley, peas or hay, and I have seldom seen in this country rain so long continued at this season of the year. It is quite a common occurrence to see heavy rain about the 1st of August, but it was very rarely continued over two or three days, until we had fine weather again. The rain, however, though injurious to some crops, and I fear it will prove so to the potatoes, may, upon the whole, as I before observed, have been productive of more general good to the country than harm; and under such circumstances, it would be wrong for those who may have suffered to murmur or complain. We had a favourable change in the weather on the 17th which has continued up to this date, and has given an opportunity to secure much of the crop that had been cut down and exposed to the bad weather, and also to cut and harvest some that was ripe.

The hay, barley, and peas, have been partly harvested, and also some of the wheat and oats. It is, however, impossible to speculate with any certainty on the final result of the wheat crop in Lower Canada at this critical period of its growth, and I shall not attempt to do so. Much will depend upon the favorable state of the weather for the next six weeks. If the crop has not been damaged by the fly before this time, and I am unable to say to what extent damage may have been done, I do not think there is any in-

jury to be apprehended from that insect at this advanced period of the season.

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Since the foregoing Report was written, though we have had some fine days, the weather was not generally favourable for the crops, and I am sorry to say that potatoes exhibit all the symptoms of the usual disease in their withered and blackened vines or tops. Where the land is of heavy clay, and in low and flat situations, the tubers are considerably affected, and I believe nothing can save the crop now, but dry and fine weather. I have never known so wet a month of August as the present has been. The quantity of rain that has fallen was not very great, as there were no floods produced of any consequence, but it was the constant recurrence of rain, and a damp atmosphere that has been so injurious. In the districts of Quebec, Three Rivers, and in the Eastern Townships, I understand they have had more rain than in the district of Montreal, and I believe that in consequence of their hay harvest commencing later with them than with us, a large proportion of their hay has been damaged, and some rendered utterly useless. This will be a great loss as the straw will be generally unfit for provender for stock in consequence of rust, and other damages. There is a large proportion of the grain crops not yet at maturity in Lower Canada, and to what extent they may be already damaged I cannot venture to say, but unless there is a favourable change in the weather very soon the final result of the harvest will be very different from what was anticipated from the fine appearance of the crops in June and July last. A favourable change in the weather now, of which there is a great appearance this day, would, however, be of incalculable advantage, and might stop the disease in the potatoe crop, mature the crops of grain not yet ripe, and enable the farmers to harvest them in good condition.

The rain we have had, has produced a luxuriant crop of after-grass, and has brought up clover and timothy seed, that was sown last spring twelve months. This is one of the benefits we have derived from the late rains—and if the remainder of the harvest and fall should be fine, we may realize a satisfactory produce after all. One thing is certain, that parties who sowed and planted in good season last spring, have not suffered much damage, and have nearly all, and in some instances in *all*, their crops now secured. If this circumstance will be the means of inducing farmers to endeavour to sow and plant early in future, the unfavourable weather will have a good effect, besides covering our meadows and pastures with a luxuriant crop of clover and grass for the feeding of our live stock, when other years they suffer very much for want of sufficient food at this season of the year. The farmer's live stock would not, I am certain, complain of the late rains and moist weather, as they so frequently suffer from short allowance in dry seasons. I may say, that our domestic animals are partners with us, have a right in the soil, and assist in cultivating and making our lands productive in various ways, and certainly they do not always get their due proportion of its products. This year it will be different with them, and the late rains which have caused injury to some of the crops of their owners and partners, will have the effect of giving them a full supply of excellent food for their share.

I conclude this addition to my first report, by humbly recommending unshaken confidence in the goodness of our Creator, that we may always, and under every circumstance have perfect reliance in His bounty—that the annual products of our lands, shall be in full proportion to the skill and careful industry we exercise in their cultivation and management.

WM. EVANS.

Aug. 30th, 1856.

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Review.

Agricultural Progress considered with special reference to New Brunswick. By James Robb, M. D., Professor of Chemistry and Natural History, King's College, Fredericton.

None of the British Provinces has made greater public efforts to improve its agriculture than New Brunswick; and the present publication does credit to the patriotic society by which it is issued. It contains much sound scientific agriculture in a very readable form—witness the following on *Manures*:—

Manuring the land, means or implies feeding the crop; and manures are only food for the crop. Barn yard manure, stable manure and night soil, are chiefly constituted of gaseous materials. This may be shewn by burning a portion, or leaving them to decay, which is chemically the same thing as burning them: in either case, a very small residuum of ash, or solid mineral matter, will be left behind.

But it may be shown experimentally, that if the soil be sufficiently fine and dry, and if a small proportion only of the required constituents of manure or crops be present in the soil, the more bulky ingredients of the crop or the manure, will be furnished by the atmosphere or by the soil, or by the water filtering through the soil; that is, the application of three or four out of the many elements which constitute the food and the fabric of crops: if some of the others be supplied with these few, the crops will grow rather faster and better than if they were given alone; but, if they should be wholly absent, even though all the others are present, the crops cannot advance or come to perfection, and the land is said to be sterile and unproductive. Such is the *rationale* of manures; such is the principle or theory of fertility, as it is apprehended at the present day.

But many centuries had passed before this simple doctrine could be established, and its important bearings upon practice are not yet fully known to many of those who are most interested in thoroughly knowing and applying it.

It would soon be found by experience, that even on *virgin* soils, after a few harvests the usual crops would refuse to grow; the land seemed to be tired of producing crops, and was considered to be sick or exhausted. Rest and a stimulant were prescribed for the farmer himself in a similar case, and why not doctor the farm, in the same way? This rest was termed *a fallow*, and *manure* was the stimulant. This is a very pretty and simple speculation; but it is unsound, and is now altogether abandoned. Nevertheless, when the modern theory, which is the sum of all experience hitherto, has superseded the old notion of rest and stimulants, these phrases affect the common agricultural creed of the country. But, be it understood, that the exhaustion of soil is not, in any respect, akin to the exhaustion of the brain or muscles of men; and that manure does not stimulate the *weary* particles of the soil to go on to bear fresh cropping. The analogy is false; and an unsound principle most commonly leads to an imperfect practice. Manure is, as already stated, merely the food of plants; and the soil gets as much *stimulated* by the presence of manure within it, as the plates upon the table are stimulated by the contact of roast mutton and potatoes. You may stimulate a Dutchman—it has been said—to deeds of daring by alcoholic potations; but, I never heard of the stimulation of case bottles or wine glasses.

Knowing that manure is food, or yields food on its decay, we ask the Chemist, what is the nature of the food, so yielded by the manure? He informs us that manure, on analysis, yields twelve or fourteen different elements, and that these coincide, almost exactly, with the elements which he finds in the analysis of common crops.

The truth begins to appear: Manure yields food for the crop; and the crop is built up from the elements which are offered in the manure. Plants find their food in the soil naturally, and, as they decay, their remains go to sustain the next year's growth; but, in artificial cropping, the produce is sold off the farm, or it is fed out to animals; and hence, we must bring back an equivalent of mineral manure to the soil, or of the cheapest available forms of anything that ever was a plant, or that fed upon plants in any shape or sense; provided these can be *readily* brought to a state of decomposition or decay. The general principal is, that whatever has been a part, or product of a plant or animal, dead or alive, may be made into manure; all that is required being, that it shall first undergo putrefaction or decay, so that its elements may become soluble again in rain water. Long continued exposure to the air will cause the gradual decay of the hardest

substances of vegetable or animal origin: Sawdust, bark, nutshells, peat, wool, hair, horn, bones, ivory, teeth; these will all decay in the long run; but, the mode of ensuring their rapid decay is to mix them up with other matters more susceptible of active decomposition. *In this way all organic matters are inoculated with the principle of decay, and become manure.*

But, are all the elements of the manure of equal importance? Are there not many of them already in the land? If so, why carry them on the land? Can we not find the most needful elements in some more concentrated form at a moderate price, so as to save in the item of carriage at all events? Such very natural questions have all been put; and exact, and satisfactory answers have been given to them. All this is progress: we now know the name and nature of most substances available for manure, and we know how most economically to make, compound and apply them.

In former times, barn yard manure was almost the only known kind of manure; and truly it ought to be, and truly it always will remain the most valuable ally of the farmer. But its supply is always regulated by the number of cattle which the farm can support, or the cost of its carriage from other places.

When I state the fact that cow-dung contains 90 per cent. of water, you will understand my train of argument; and it will be further strengthened by learning that, of the remainder, about one half would be supplied by nature without our interference at all. That is the reason why, ever since 1840, it pays to bring guano from the other side of the globe itself, to the fields of England It pays to bring guano, or nitrate of soda, for fifteen thousand miles to England, simply *because* they contain in a more concentrated form, the most essential constituents of barn yard manure, an article which itself cannot be profitably carried ten or fifteen miles, and which, by improper treatment, may not be worth carriage for a quarter of that distance. One of the valuable elements of farm yard manure is ammonia, or "putrid Nitrogen," as it has been called. It is present in variable quantity, according to the way in which the manure has been managed: box manure contains about 20 lbs. to the ton; well washed manure does not contain more than 5 or 6 lbs.; but, on the average of good farms it may contain about one half per cent. or 11 lbs., to the ton. Now the money value of that ammonia at the maker's is about seven or eight shillings; so that at remote places, it may be much better economy to buy the one than the other. The same quantity of ammonia might be had in 50 or 60 lbs., of guano, of which the best kinds contain nearly twenty per cent. of ammonia. In 1855, there were imported into England about 240,000 tons of guano, containing from forty to fifty times more ammonia and phosphoric acid than barn yard manure, and therefore equivalent to about ten millions of tons of the latter; and as one ton of guano will grow eight tons of wheat, it was equivalent to the importation of nearly two millions of tons of that article. Nitrate of soda is brought from Chili for nearly the same purpose as guano, and its importation and use are found to be profitable.

Bones, which contain twelve times more of the Nitrogen or forcing principle, and eighty times more Phosphoric Acid or grain forming principle than stable dung, are imported from Rio Janeiro and Australia; and, when applied to worn out pastures in Cheshire, under the form of Bone dust, or as "Supherphosphate," are found to pay 25 per cent., on the operation. One hundred weight of Peruvian Guano yields (besides Nitrogen) Phosphoric Acid for about 18 bushels of wheat, and 1800 pounds of straw.* More than 30,000 tons of Bones are imported annually into Great Britain for manure. Thus it will be seen that our list of manures has increased most materially, and that we know how to estimate the money value of all natural or artificial compounds offered as such.

By such new fashioned articles as manures, the farmer is enabled to render his land more productive, to renovate quickly land which has been exhausted by cropping, to bring land rapidly to its highest pitch of fertility; to maintain whatever rotation or succession of crops as is most profitable in the particular locality; to invigorate weakly crops, and to supply himself with any amount of general or special manure at the shortest notice.

"In the case of Guano, and the Salts of Ammonia," to use an expression of Mr. Lawes, "pounds weight only of manure are brought "upon the farm to produce tons of growth; "in the other you bring tons to produce pounds."†

You can now understand how guano and the superphosphate of lime—things undreamt of by our forefathers—saved English farmers, at the time of the repeal of the Corn Laws, by giving such an increased productiveness to the land as to make up for the sudden fall in the price of food.

The demand for these new manures in England generally exceeds the supply, and, at the present time the Royal Agricultural Society of England offers a prize of one thousand guineas to any one who will suggest a prescription for a manure that shall contain as much nitrogen as guano, and be available for general use at prices not exceeding £5 per ton. There is no trouble in making a mixture equivalent, in manurial value to guano, or more than equivalent; but, at present, we do not know how to do it at the price paid for the genuine article;‡ for the ammonia in guano comes cheaper to the farmer in that than any other form: The price of ammonia in fact may be said to regulate that of guano. If Chemistry could shew us any way of cheapening ammonia the price of wheat would fall, and the Chemist would have more to do with fixing the price of beef than the butcher himself. Notwithstanding the large amount annually disbursed for new manures, agriculture in England was never so productive as at the present time and so profitable to both landlord and tenants. Since the beginning of the present century rents have doubled; the breadth of land under crop has vastly increased; the productiveness of the land has increased nearly one half; food has become cheaper and the farmers or producers of food much more wealthy, intelligent and contented.

* Journ. R. Ag. Soc. xii. 37.
† Journ. Soc. Art, iii. 264.
‡ Scottish Journ. of Agriculture for 1852, p. 199.

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New Agricultural Act.

CAP. XLVII.

An Act to amend the Act to provide for the better organization of Agricultural Societies in Lower Canada, and for other purposes connected with Agriculture in Upper and Lower Canada.

[*Assented to 19th June*, 1856.]

WHEREAS it was provided by the Act passed in the sixteenth year of Her Majesty's Reign, intituled, *An Act to provide for the better organization of Agricultural Societies in Lower Canada*, that from and after a day therein mentioned a County Agricultural Society should be organized in each of the then existing Counties of Lower Canada, upon the conditions and in the manner therein prescribed; And whereas by the Parliamentary Representation Act of 1853, and the Parliamentary Representation Amendment Act of 1855, Lower Canada has been divided into new and additional Counties or territorial divisions, and it is therefore necessary to extend the provisions of the first mentioned Act to such new Counties or territorial divisions: Therefore, Her Majesty, by and with the advice and consent of the Legislative Council and Assembly of Canada, enacts as follows:

1. All and every the provisions of the said first mentioned Act are hereby extended to each of the new Counties mentioned and referred to in the said Parliamentary Representation Acts, in like manner and to the same effect as if they had existed as separate and distinct counties at the time of the passing of the said first mentioned Act.

II. It shall be lawful for each of the present electoral Counties to organize one Agricultural Society only, which shall bear the name of the County in which it may be established, excepting however the Counties of Gaspé, Bonaventure, Vaudreuil, Nicolet and Drummond, which may establish or continue to have two Agricultural Societies within their respective limits.

III. The Societies at present existing in the Counties of Vaudreuil, Bonaventure, Gaspé and Nicolet, shall retain their present limits, and shall be continued under their present organization; the County of Drummond shall be divided so as to form two Societies, the operations of the second to extend over

the Townships of Kingsey, Simpson, Durham, and the first five lots of the four first ranges, and the two first lots of all the other ranges of the Township of Wickham.

IV. And whereas it is necessary to make some provision for the encouragement of Horticulture in Lower Canada; therefore, it shall be lawful for the Board of Agriculture in Lower Canada, out of the amount to which the said Counties and other electoral divisions claiming the same may be respectively entitled from the public funds, to place at the disposal of any Horticultural Society which may be formed in any County, or in any City or Town within the body or ordinary limits of such County, though not within its electoral limits, a sum equal to that which may be subscribed for that purpose by the inhabitants of such County, City or Town, and not exceeding thirty-seven pounds ten shillings, to be applied towards defraying the expenses incurred by such Horticultural Societies in promoting the main object of their institution.

V. And in order to equalize as nearly as may be, the amount to be paid out of the public funds to the Agricultural Societies of Upper and Lower Canada respectively, the sum to be paid to each County in Lower Canada, for the several Societies established or to be established therein, shall not exceed two hundred pounds; and until some Legislative enactment shall have been passed adapting the existing Agricultural Acts of Upper Canada, to the number of electoral divisions therein, a sum equivalent to any excess which may be paid to Lower Canada over Upper Canada, under this Act, shall be reserved for the several Agricultural Societies of Upper Canada, the said amount to be placed at the disposal of the Board of Agriculture for Upper Canada, and paid into the hands of the Treasurer of the said Board of Agriculture.

VI. In any County in which two Societies shall at present exist, or may hereafter be established, such Societies shall be equally entitled to receive the annual grant, not exceeding one hundred pounds, in the same manner as County Societies; in case only one Society shall be in operation in any of the said Counties during any year, such Society shall not be deprived of the right of subscribing the sum requisite to entitle them to the whole grant allotted to the County in which such Society shall be established; ie case any one of the Societies in any of thn said Counties shall not have subscribed the amount sufficient to entitle it to receive the whole of its share of the grant, the other Society upon subscribing the necessary amount, shall be entitled to obtain the balance of the said grant.

VII. Societies organized before the passing of this Act, excepting those specially referred to in the third Section of this Act, shall cease to exist, and shall provide for the final settlement of their affairs, between the day of the passing of this Act and the first day of January, one thousand eight hundred and fifty-seven; Provided always, that nothing herein contained shall have the effect of preventing the new Societies to be established in virtue of this Act, from being so far organized during the interval, as to enable them to go into full operation upon the first day of January, eighteen hundred and fifty-seven.

VIII. Every new Agricultural Society which shall be organized in virtue of this Act, previously to the first day of August next and which shall have subscribed the necessary amount, shall be entitled to the grant provided for by this Act, and any new County which contains the majority of the subscribers to any Agricultural Society, shall also be entitled to receive a similar grant, without proceeding to any new election of officers for the current year, and the officers previously elected, and residing in the said new County, shall continue to manage the affairs of the Society until the first day of January next; Provided always, that all debts now due by any former Agricultural Society, shall be paid by that Society within the limits of which the exhibitor who may have obtained the prize may reside.

IX. All sums of money subscribed or paid by any subscriber towards the funds of any Agricultural Society now formed, shall be held to have been subscribed and paid for the benefit of any Society to be formed under this Act, comprehending within its limits the residence or landed estate of such subscriber, and shall be applicable and paid by the Treasurer of the old Society to the Treasurer of the new Society; Provided always, that such new Society shall be formed and go into operation on or before the first day of August next.

X. The several provisions, conditions and restrictions of the said first mentioned Act respecting the formation of Agricultural Societies, are hereby made applicable to the formation of Horticultural Societies, except in so far as relates to the authority to form more than one Agricultural Society in each County, and except also in so far as the same may be altered by this Act.

XI. In every case in which a Parish or Township or part or parts thereof comprised within the limits of a County entitled to form one or more Agricultural Societies, has or have been attached for representation purposes to any Town in Lower Canada, and together with it forms an Electoral Division, such Electoral Division shall be deemed a County within the intent and meaning of this Act, and all the provisions thereof and of former Acts in force relating to agriculture in Lower Canada, shall apply to such Electoral Division; provided that it shall not be entitled to more than one half of the amount of the public grant for a County.

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SINGLE FACTS AND EXPERIMENTS

Mr. Levi Bartlett of Warner, N. H., so well and favourably known to our readers, in an article on Gypsum and other Mineral Manures, in a late No. of the *Granite Farmer*, cautions agriculturists against an error which they are very apt to make, and which is made, in fact, every day. This error consists in drawing unwarrantable inferences from one single fact or experiment. As an illustration of an erroneous mode of drawing inferences, and of the need of a caution against it, Mr. B. writes as follows:—"Last May, I used Peruvian and Mexican guano, De Burg's superphosphate of lime, plaster and ashes, in my corn hills as the corn was planted—guano in the first two rows—then left one row unmanured—then two rows with Mexican guano—next row no manure, and so on with ashes, plaster, superphosphate—then guano again, &c. The land (green sward,) was well manured, plowed seven inches deep, rolled and harrowed."

The corn, Mr. B goes on to state, came up well; but the rows to which the two guanos, the ashes, and the plaster, had been applied, never exhibited one particle of benefit in any stage of their growth. The superphosphate, however, doubled or more than doubled the growth of leaves and stalks, over the other kinds of manure, and very greatly increased the amount of corn at harvest. "Now," says Mr. B., "does this experiment prove that superphosphate is the best of all manure for Indian corn, and that guano, ashes, and plaster, are of no value to the corn crops.? It does not prove any such thing—it simply proves that on the land I planted last year, the guano, ashes and plaster did no good, while the superphosphate produced very striking results."

Of the diversity of results from the use of the same fertilizer, according to the nature of the soil and several other circumstances, Mr. B. gives an example in the paper referred to. He states that on the farm adjoining his, he has seen the quantity of corn (the forage) doubled in weight in the months of July and August, where a small quantity had been dropped in the hill at planting time, over that of adjoining rows not plastered. These results have taken place both on manured and unmanured land. In some seasons a material difference in favor of the plastered rows could be seen at harvest-time also; while in other years there was none of any amount.

On his own farm, M. B. has never been able to perceive any benefit from the use of plaster on his root crops.

Many examples might be added of the most diverse results from the use of the same manures on different soils, in different seasons, &c. Sometimes astonishing results are produced, and sometimes none at all.

This great diversity of results should make the tillers of the soil slow to draw inferences from *single* experiments, and should put them on their guard against that common mistake. It should impress upon them, also, the importance and the advantage of some *concerto action* among those who are willing to bea the trouble of conducting careful experiments in order to increase the stock of agricultural knowledge. Let it be agreed among a few to test some point every year by a set of *conjoint experiments*.

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Salt and Guano.—Recent experiments, as stated in the *Mark Lane Express*, go to show that common salt is a valuable addition to all applications of guano to the soil. It not only has a tendency to give strength and hardness to the straw, which guano weakens, but prevents the loss of ammonia which is constantly going on in even in a dry atmosphere. M. Barrel, the editor of a French agricultural journal, says: "We left in the open air, in

plates, during fifteen days, equal weight of pure guano and the guano previously mixed with salt. At the end of that time we examined anew the amount of nitrogen, and found that the pure guano had lost 11.6 per cent. of its nitrogen, while that mixed with salt had lost only 5 per cent." The *Express* recommends the use of refuse salt from fish packers for this purpose, and any refuse salt would probably answer the purpose.

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GRASS—HAYING—HAY.—July is the month when the principal portion of the hay crop in New England is secured. It is our staple crop—the one by which we mainly increase the fertility of our farms, and having a greater money value than any single crop produced at the South;—either their cotton, tobacco or corn crop is insignificant, compared with it; and New England, rocky and sterile as much of it is, and whose soil is contemned by those living on easier and richer lands, produces a surplus for those who possess every facility for raising it, if they had industry and knew how.

Much of our best land for this crop still lies waste; it is in meadow and swamp that need either thorough reclaiming, or if partially reclaimed, draining and deep plowing. When such lands are once well set in grass, they will produce profitable crops for many successive years, with little annual expense. Another kind of excellent grass land is of granite formation, at a higher level than the meadow, but still having land abounding in springs above it. These lands are a heavy loam, quite often a clayey loam, and generally pretty rocky. It is sometimes as expensive to reclaim these, as it is the swamp, but when once swarded and fed annually with a moderate dressing of compost, they will produce from two to three tons of excellent herds-grass and red-top, for a dozen years in succession. Such, mainly, are the lands which should be devoted to grass.

The importance of this crop would justify the farmer in making a good many experiments, and in devoting considerable time to an investigation of it in all its bearings. We believe there is no crop that is commonly cultivated, in which so much loss is suffered as in the hay crop. After a selection and proper preparation of suitable lands, and seeding and growing the crop, the first error usually committed is in the.

The time of Cutting—Professor Martyn says, "grasses are Nature's care." We wish they were more frequently the care of man. We are well aware of the variety of opinions entertained as to the proper time of cutting, and of the difficulty of not being able to secure the whole crop at the precisely appropriate time; still there is a carelessness or indifference existing, which results in serious loss. The farmer must remember that it is not so much the *bulk of hay* on his scaffolds, that is to afford nutriment to his cattle and take them through the winter in good flesh and health, as it is that the hay is secured with all its natural juices which it is possible to preserve.

In order to secure this it must first be cut at the right time. If cut too soon, before the sap is fairly elaborated into nutritive properties, such as sugar, mucilage, albumen, &c., it shrinks immensely, and when dry has but little bulk or nutriment. On the other hand, if left too long, the plant expends its energies upon the seed in accordance with the natural law to perpetuate its kind. The seeds ripen, and fall to the ground and are lost, while the stem and leaves are little better than oat or barley straw.

But if the favourable moment can be improved to cut the grass just as its blossoms begin to fall, when the seed has formed, but is not perfected, then we secure all its nutritive properties if the

Grass is Properly Cured.—The object in making good hay, says Low, is to prepare it as quickly as possible, and with as little exposure to the weather, and as little waste of the natural juices, as circumstances will allow. When we are enabled to do this the hay will be sweet, fragrant, and of a greenish color. We still do much of our farm work under the English notions which came here with our ancestors, without taking into account the great difference in the climate of the two countries. There, they employ *four* days in curing the herd's grass, which is often admirably done under our July suns in a single day! Many farmers do not consider the effect of these cloudless suns, and the consequence is that they dry their hay until its jucies are evaporated, and a large proportion of its value lost. One cloudless July day, with a slight breeze, is sufficient to cure hay cut in the morning or the previous evening, where there is not more than thirty hundred to the acre. In such a case the swaths should be evenly spread, and it will be necessary to stir it quite often, and lay it up as lightly as possible from the ground.

A general rule should be enforced that no hay be left in swath or winrow over night, unless it be that cut just before or after sundown. There are two advantages in its being cocked: it prevents the injurious effects of dew or rain, while the slight heating process which is going on causes an exhalation which is retained in the cock, and gives the hay a most fragrant odor. In *good weather*, two days, at most, are sufficient to secure hay, even when heavy crops are cut. The cocks should not be opened on the second day until the dew has gone, and then only opened in thick masses. After lying in this manner until noon they are ready to be carted to the barn.

Clover requires a very different process. It should be cut close to the ground, and allowed to remain until the afternoon of a bright day, in the swath; then they should be carefully turned upside down with a fork, and left over night. After dinner on the following day, the swaths should be taken up with the fork and laid in a cock—not rolled or pushed up—and then these cocks may remain two nights. After that, on a clear morning, they may be turned over to admit the sun and air for a few hours, when they will be ready to go in, with their leaves all on, and as sweet and fragrant as a nosegay. A load of brush is worth about as much for cattle as a load of clover, cured as it is often done. Allen, in his "Farm Book," says there is a loss of nutritive matter in the ordinary mode of curing hay, which is obvious to every careful feeder. This is conspicuously evident, in the diminished quantity of milk yielded by cows, when taken from the pasture and put upon the hay made from grass similar to that before consumed. There is undoubtedly a combination of causes to which this may be imputed, but the bad condition of the hay is often a prominent one.

Salting Hay.—This is now, we believe, extensively practiced, and judiciously done, we have no doubt it is well. Those who are in the habit of placing salt before cattle, know that during the winter season they will take but little. A cow consuming a ton of hay in the cold months, we are confident would not voluntarily consume two quarts of salt—and yet many farmers are in the habit of applying *esght quarts* to a ton! This is probably the source of many of the recent diseases among cattle. It leads, also, to the slovenly practice of getting in the hay in a damp or partially cured state, under the idea that the salt will preserve all its virtues.

The whole subject of hay-making needs more consideration. Several things are suggested which must be left for another talk.—*New England Farmer.*

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Ducks in China.—It is well-known that a considerable portion of the inhabitants of China dwell in floating houses, or rather in boats, with large and convenient cabins, where men, women and children may be seen in abundance, having no other home, and gaining a slender livelihood by some occupation that does not require a residence on *terra firma.* In the neighborhood of Canton, many of the owners of these movable dwellings employ themselves in rearing ducks; and the sagacity which these animals exhibit is remarkable. Every morning they are allowed to leave their habitation, and indulge in their aquatic amusements; and sometimes five or six hundred of these noisy creatures are seen sporting on the waters near one of these floating duck pens. They never stray far from their homes—and the sound of a little tinkling bell seems to produce upon them a magical effect. The moment the first sound of the bell is heard, the ducks hasten towards their home with astonishing swiftness, and the commotion thus instantaneously produced in their rank, is amusing enough, each one being apparently anxious to out-strip his companions in the race—and such a scene of shoving, swimming, flying and gabbling is seldom seen

among ducks in any other part of the world than in China. This prompt obedience on the part of these stupid water fowl, is the result of education; and the means used, although exceedingly efficient, are very simple. The last duck which reaches the boat is invariably seized by the duck-master-general, and is compelled to undergo a severe drubbing with a bamboo cane—and the fear of this punishment, which they are exceedingly desirous to avoid, ensures the most perfect order and obedience among these animals.

This mode of managing ducks is somewhat similar to that just and humane expedient resorted to on board of some of the English ships of war, and for aught we know, American also, to induce the men to hasten on deck with all possible despatch, when all hands are called to quarters, or for any other purpose. A boatsswain's mate is stationed at the hatchway, and those who happen, through negligence, indolence or accident, to be at the fag end, are sure to get a severe "starting."—*Portfolio.*

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THE CLIFF SWALLOW.—A beautiful story is going the rounds, taken from an old number of the Greenfield (Mass.) *Advertiser*, of the Cliff Swallow, which species has recently made its appearance, and begun to make settlements under the eaves, in Delaware county, Pa., its nest being in the shape of a retort with a long neck.—The story referred to is of one of these swallows, which was seen to linger after the tribe had taken its usual flight to the tropics, apparently alone, through the autumn and winter. The following is the explanation:

Spring came, and he was there. An occurrence so singular, and contrary to the habits of the migrating tribes, caused his motions to be watched with more attention. At length another head was observed protruding from one of the nests, which seemed to be the abode of the bird which had been remarked with so much interest. On examining the nest the mystery was beautifully solved. Another swallow was found there a prisoner.

One of its legs had become entangled by a thread of hair, which had been used in the lining of the nest, and held it there a capture. Yet it was not deserted by its faithful mate. Through all the long and dreary winter this patient self-devoting love supplied her wants. He was without regret, but for his hapless consort, the deepening gloom of the fading year; he felt without feeling, but for her, the advancing rigor of winter; and if he, at times, remembred the sunny skies of the South, and the pleasures his tribe were then enjoying, it was only to sigh that she could not partake of them. By night and by day, in sunshine and in cloud, in the calm and the tempest, he was with her, ministering to her wants, and cheering the hours of her hopeless captivity by his caresses and untiring devotion.

HOW TO TREAT AN OLD ORCHARD.—*Mr. Editor*:—In your directions to your correspondent relative to cultivating old orchards on poor land, I think you are not quite thorough enough for a farmer of the "old Bay State," and many of us away up here in Vermont look to you for direction *how* to do all things pertaining to farming, so that a mistake of yours causes great injury. I will relate my experience in this matter, which you are at liberty to use as you think proper.

Seventeen years since, I purchased a lot in this village, one mile from, and two hundred and fifty feet above the lake, having a western slope. When I tell you the owner was a sea-captain, that he had not seen it for fifteen years, during which time it had been rented to, generally, yearly tenants, you can imagine its condition better than I can describe it.

On this place was one and a quarter acres of what had once been an orchard of apple trees only; more than half the original trees had died of starvation, or been cut down and burned by various tenants; about thirty trees remained; one-third of them grafted when young, the others natural fruit. These were in such condition that all my friends advised me to cut down most of them, and plant young trees—but, like most Yankees, being stubborn and self-willed, I determined first to try experiments.

I made two drains through the lot, 20 inches deep, carefully completed after the usual mode of *blind* drains. In the spring, after wet seasons, water runs freely from them, two to four weeks; after the dry season, they are dry during the spring; summer rains never affect them. In April, I purchased and applied 50 loads of coarse manure, at an expense of one dollar a load. This was spread evenly, the land carefully plowed and levelled with a hoe. I then applied eight loads of twenty-five bushels each of refuse lime, perhaps equal to half the quantity of fresh slaked lime; this was spread on the surface. The next operation was to have gardener from the "ould counthriee," (brought up as most foreign gardeners are at the end of a spadehandle) dig with a spade about each tree, twelve to eighteen inches deep, and as far as the roots extended: to complete two trees was his regular day's work. In the summer following, I employed two active young carpenters to prune it, of course, as I directed. Large quantities of dead and decaying limbs were removed; on many trees nothing but sprouts were left; some half a dozen trees were so decayed that as soon as they commenced growing, the dead portions were loosened so as to drop out, and the trees needed heavy posts to sustain them; nearly all of them were either hollow or decaying at the heart.

The next season I commenced grafting; the trees being in active, growing condition, large tops were soon formed. I have since yearly applied a heavy top-dressing of "long stable manure," mostly straw or swamp hay used for bedding horses and cows, and as often as once in three or four years, refuse lime or ashes and peat or swamp muck. The ground has not been cultivated where shaded,—nor has it been necessary—the yearly top-dressing keeping it very light and porous. The grass has been cut often every season.

The pratical result of this treatment has been, that an orchard considered worthless, has, in proportion to the number of trees produced *more* and *better* fruit than any other in this county, more uniformly productive, and is still in a healthy condition. The vacant places when purchased were filled with young trees now in full bearing. But one tree has died in seventeen years, and that in the winter of 1854-5, after the drought of the preceding summer which was very destructive to trees of every description.

This may look like too much work, but if any farmer will try the experiment, call his land and old trees $1000 per acre—charge his manure and all labour to expense account—sell all the products, and after fifteen years' experience he will find a balance of profit equal to any other of his farm and probably much greater.

C. GOODRICH.

Burlington, Vt., March, 1856.

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ABOUT BUDDING.—The time in which budding is usually performed is from early in July to the middle of September; plums and cherries are among the earliest to be budded, and pears, apples and quinces the latest. If the season in July, or even in August, be very dry, budding had better be postponed until there are copious rains. Stocks, from a quarter of an inch to an inch in diameter may be budded, although those of an inch are more suitable for grafting. The buds should be selected from thrifty shoots that have nearly done growing.

Shield, or T budding, is the most approved mode in all countries, and is described by Downing as follows:

Having your stick of buds ready, choose a smooth portion of the stock. When the latter is small, let it be near the ground, and, if equally convenient, select also the north side of the stock, as less exposed to the sun. Make an upright incision in the bark from an inch to an inch and a half long, and at the top of this make a cross cut, so that the whole shall form a T. From the stick of buds, your knife being very sharp, cut a thin, smooth slice of wood and bark containing a bud.—With your budding knife, now raise the bark on each side of the incision, just wide enough to admit easily the prepared bud. Taking hold of the footstalk of the leaf, insert the bud under the bark, pushing it gently down to the bottom of the incision. If the upper portion of the bud projects above the horizontal part of the T, cut it smoothly off now, so that it may completely fit. A bandage of the soft matting is now tied pretty firmly over the whole wound,

commencing at the bottom, and leaving the bud, and the footstalk of the leaf only exposed to the light and air.

After treatment.—In two weeks after the operation you will be able to see whether the bud has taken, by its plumpness and freshness. If it has failed, you may, if the bark still parts readily, make another trial; a clever budder will not lose more than 6 or 8 per cent. If it has succeeded, after a fortnight more has elapsed, the bandage must be loosened, or if the stock has swelled much, it should be removed altogether. When budding has been performed very late, we have occasionally found it an advantage to leave the bandage on during the winter.

As soon as the buds commence swelling in the ensuing spring, head down the stock, with a sloping back cut, within two or three inches of the bud. The bud will start vigorously, and all "robbers," as the shoots of the stock near to and below the bud are termed, must be taken off from time to time. To secure the upright growth of the bud, and to prevent its being broken by the winds, it is tied when a few inches long to that portion of the stock left for the purpose, about mid summer, if the shoot is strong, this support may be removed, and the superfluous portion of the stock smoothly cut away, when it will be rapidly covered with young bark.

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TIME TO PLOW.—It is often difficult to know when to plow. If ground is moved when wet, it often remains in very hard and compact lumps. If we wait until the ground is dry, so much work is brought together that it cannot be done in time. A few common sense thoughts may aid in this matter:

1. Sward ground may be plowed when much wetter than any other, without causing it to be hard on drying.

2. Sandy and gravelly land is much less injured by handling when wet, than clay or clay loam.

3. The plow is not half as bad for wet ground as the harrow for several reasons. In plowing, the team tread on the broken ground far less than in harrowing. The action of the plow is different. The one raises up and turns over, the other drags down and presses together. So true is this, that ground thus harrowed will soon become a mass of brick-bats, and remain so for years. Ground may be plowed when pretty wet if you will let it remain untouched afterwards, till dry and warm, and by this treatment it will be fit for sowing sooner than if not plowed.

The same principles will apply to spading and raking. Ground may be spaded up when considerably wet, if you lay down each spadeful carefully, and be sure not to touch it with the spade or with a rake until it is thoroughly dry. But if each spadeful is knocked down with the spade, and as soon as the surface crumbles, is raked until it is beautifully smooth, the air will be to a considerable extent excluded, and the whole ground be hard and difficult to till during the whole season. Plowed or spaded, the ground, if wet, should be left as loose as it can be left, that it may dry rapidly and crumble easily, and the case must be a very urgent one which will justify putting the harrow or the rake upon it till it is dry. Then it will break down easily and remain light and easily tilled through the entire season.—*Dr. Reed, Pittsfield.*

——:o:——

CHINESE FARMING.—Every foot of ground is in the highest state of cultivation, and I have never seen farms kept in better order in any part of America. The fact is, foreigners have already derived many useful hints from the Chinese, and may yet learn more. The chain-pump, which, has been patented in America as an original invention, has been in use for centuries in China. It is used to elevate water from the canals on to their rice-fields. A Frenchman, some fifteen years ago, with much eclat, commenced hatching eggs by steam in Paris. This has been practised so long in China, that even tradition cannot tell who was the discoverer of the art. They have large establishments in the different towns, where thousands may be seen hatching at a time. This, however, is a digression. The canals also serve another purpose. Where the farmer is not near a town, they supply him with the most of his manure.—In every direction we saw the farmers, with bamboo tongs, drawing up the rich mud from the bottom, just as fishermen catch oysters. This they spread on their farms. The staple productions of this plain are wheat, rice, hemp silk and cotton.

——:o:——

UNDERDRAINING PROFITABLE.

EDITORS COUNTRY GENTLEMAN—I have from time to time read with much interest and profit, the various articles in your paper on underdraining, and if by contributing my experience any one is benefited, I shall consider myself well paid for writing.

Four years ago this spring, I purchased a farm, the greater part of which was rather wet for ordinary agricultural purposes, besides being exhausted by constant cropping and bad management.

After trial, and observation of similar soils adjoining, I came to the conclusion that the only real remedy was to underdrain the wet portions. Accordingly three years ago the coming summer, I employed a man and set him to work in a small lot, lying beside the road, and in a situation where it was seen by every passer by. The lot was so wet that it had not been used but very little, except occasionally for pasture, and was grown up to bushes and weeds, and pretty well covered with stones.

The lot lay very convenient for underdraining, with an even surface, and sloping gently to the south. In draining, a ditch was first cut, up and down the hill, through the middle of the field, 3 feet deep; then side ones were cut from this to the side of the lot diagonally, 2½ feet deep, at such distances apart as was thought necessary to take off the surface water. The ditches were then filled with stone to the depth of from 15 to 18 inches; first some six or eight inches, the stone were packed in tight; the remainder of the stones were thrown in promiscuously. The stones were then covered with straw and bog grass, and the ditches then filled up with dirt, and packed down solid. This I consider very necessary, as I have had some spoiled by throwing the dirt in too loosely, so that the water from the top soon after filled them up. This is almost sure to occur if a heavy shower come soon after filling.

The next season after ditching, the lot was planted to corn, manured in the hill with fine barn-yard manure, and was more than an average crop for the season, which was very dry. I was enabled to plow it more than two weeks earlier than land joining it, naturally quite dry.

Last season it was sown to oats and yielded fifty bushels per acre. It is now sown to rye, and looks remarkably well.

From what little experience I have had, I believe that the greater part of our worn-out wet lands in this section, that are now nearly worthless, may, by a judicious system of underdraining, be made to rank among our best lands, and that too at a cost not exceeding fifteen dollars per acre.

I find in my own case the land that would scarce pay 2 per cent at $20 per acre will now better pay 7 per cent at $50. It cost me at the rate of $20 per acre to clear and underdrain mine SYO. *Rens Co., N. Y.*

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

29th August, 1856.

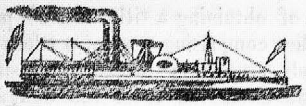
Hay from 11⅓ to $13 per 100 bundles.
Straw from 2 to $4. do.
Fresh Butter, per lb. from 1s 3d to 1s 6d.
Salt Butter, do from 10½d to 10½d.
Country Cheese, from 6d to 8d.
Wheat, 6s 6d to 7s.
Barley, 4s to 5s.
Rye, none.
Oats, from 2s 3d to 2s 6d.
Yellow Indian Corn, from 3s to 3s 9d.
Indian Corn, (Ohio) 2s 6d to 2s 9d.
Buckwheat, from 2s 6d to 2s 9d.
Peas, from 3s 3d to 4s.
Beef, per 100 lbs, from $4 to 8.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 7d.
Veal, 7d to 7½d.
Eggs, 9d to 10d.
Honey, per lb. 7½d to 8d.

WANTED—AGENTS

TO SELL STEEL PLATE ENGRAVINGS, including the beautifully illustrated Engraving of the "Lord's Prayer and Ten Commandments." An active person with a small capital can mak $50 to $75 per month. For particulars, address

D. H. MULFORD,
4 ins. pd. No. 167, Broadway, New York.

JUST RECEIVED
Statutes of Canada for 1856,
Price 10s.
H. RAMSAY.
Sept. 1, 1856.



The Steamer Terrebonne,

CAPT. VOLIGNY.

The DIRECTORS of the TERREBONNE NAVIGATION COMPANY, for the purpose of encouraging the Provincial Agricultural Exhibition, which will take place this year at Three Rivers, have resolved to place the Steamer TERREBONNE at the disposal of the Agriculturists in the North of Montreal, for the conveyance of Animals and Agricultural Products to the place of Exhibition. In consequence, this Steamer will leave the Port of TERREBONNE—where the Exposition of the County shall take place —on MONDAY, day of the Exposition, the 15th SEPTEMBER next, at — o'clock, P.M., for Three Rivers, calling at Lachenaie, St. Sulpice, and Lanoraie, and will return on the last day of the Exhibition.

Sept. 1, 1856. 1 ins.

AGRICULTURAL SOCIETY

OF THE

County of Jacques Cartier.

THE FIRST ANNUAL EXHIBITION of this Society will take place at the Village of LA POINTE CLAIRE, on the Property of MR. EUSTACHE LETANG, the TWENTY-FIFTH Day of SEPTEMBER next, at ELEVEN, A. M.

Prize Lists will be distributed to the Members of the Society in a few days.

By Order.

N. M. LECAVALIER,
Secretary-Treasurer.

St. Laurent, 25th August, 1856. 1is.

AGRICULTURAL SOCIETY,

Two Mountains, No. 1, Argenteuil.

THE ANNUAL EXHIBITION of this Society will take place at the Village of LACHUTE, ARGENTEUIL, on THURSDAY, the 25th Day of SEPTEMBER next, at TEN, A. M.

For further information see Prize List.

A. HOWARD,
Secretary-Treasurer.

St. Andrews, 1st Aug., 1856. 1is.

AGRICULTURAL SOCIETY No. 2,

OF THE

COUNTY OF LEINSTER.

THE PUBLIC EXHIBITION will be held at the Village of the Township of RAWDON, on TUESDAY, the 14th OCTOBER next, to commence at TEN o'clock, A.M.

By Order,
J. HORAN, Sec.-Treas.
A. S. No. 2, C. L.

Rawdon, 28th August, 1856. 2 ins.

THE MEGANTIC

AGRICULTURAL SOCIETY, No. 1,

WILL hold their ANNUAL CATTLE SHOW and PLOUGHING MATCH, the latter on the 29th, as near to the AGRICULTURAL HALL as a suitable field can be obtained, and the former on the 30th SEPT., next, at the AGRICULTURAL HALL, Township of Leeds.

JOHN HUTCHESON,
Secretary-Treasurer.

Leeds, 20th August, 1856. 1is.

AGRICULTURAL SOCIETY, No. 1.

OF THE

COUNTY OF CHAMBLY.

THE ANNUAL EXHIBITION of STOCK, &c., &c., of this Society, will take place on the COURT-HOUSE GROUNDS, in the Village of ST. JOHN'S, on WEDNESDAY, the 24th day of SEPTEMBER next, at TEN o'clock, A. M. For further information see Prize List.

L. L. ROY,
Secretary-Treasurer.

Blairfindie, July 12th, 1856. 2

NOTICE.

THE COUNTY of SHEFFORD AGRICULTURAL SOCIETY, No. 2, will hold its ANNUAL EXHIBITION and CATTLE SHOW at the Village of GRANBY, on THURSDAY, the 9th day of OCTOBER next, commencing at TEN o'clock, A. M., for particulars see Prize List.

By Order,
F. WOOD.
Secy-Treasurer.

Granby, Aug. 1st 1856. 2 p

CATTLE SHOW

OF THE

COUNTY OF HOCHELAGA.

PREMIUMS offered by the COUNTY of MONTREAL AGRICULTURAL SOCIETY, at the CATTLE SHOW, to be held in the Large Field (the use of which has again been kindly granted by General EVANS,) at extremity of St. Urbain and St Charles Barromée Streets, terminating at Sherbrooke Street, in this City, on THURSDAY 11th SEPTEMBER, 1856, at ELEVEN o'clock, A. M.

GENERAL COMPETITION.

	DOLLARS.		
For the best Draught Stallion, .			12
Do 2nd do . .			10
Do 3rd do . .			8
For the Stallion best adapted to propagate a good class of Carriage Horses, ...			10
Do 2nd do			8
For the best Saddle Stallion, . .			10
Do 2nd do . . .			8
Brood Mares, 3 premiums, . . .	10	8	6
Two years old Horse Colt, 2 prems.		6	4
Two years old Fillies, 3 premiums,	8	6	4
Bulls, Aged, 3 premiums, . . .	8	6	4
Do 2 years, 3 do . . .	5	4	3
Do 1 year, 3 do . . .	4	3	2
Rams, aged, 3 do . . .	6	5	4
Do 1 shear, 2 do . . .		4	3
Boars, aged, 3 do . . .	5	4	3
Do pigged on or after 1st March last, 3 premiums, ...	5	4	3
Canadian Cloth made in a family, 15 yards, 3 premiums, . . .	5	4	3
Flannel, 15 yards, 3 premiums,. .	5	4	3
Linen, 15 do 2 do . .		4	3

TO THE ENGLISH CLASS.

Cows, 3 premiums, ...	8	6	4
Best two year old Heifer, 3 prems,.	6	5	4
Do one do do 3 prems,.	5	4	3
Ewes, aged, pens of two, 3 prems,.	5	4	3
Do 1 shear, 2 premiums, ...		4	3
Sows, with a litter of Pigs, or with young, 3 premiums. . . .	6	5	4
Pigs, best pair, pigged on or after first March last, 3 premiums, . .	4	3	2
Cheese, best 2, 15lbs. each, this year's make, 3 premiums, . .	6	5	4
Butter made in the county, firkins 28lbs., 4 premiums, . . .	7	6	5	4
Fresh Butter 3 lbs, in quarters, as prepared for market 3 prems.	4	3	2

TO BE COMPETED FOR BY FRENCH CANADIANS ONLY.

Cows, 3 premiums, ...	8	6	4
Best two year old Heifer, 3 prems.	6	5	4
Do one do do 3 prems.	5	4	3
Ewes, aged, pens of two, 3 prems.	5	4	3
Do 1 shear do 2 prems.		4	3
Sows, with a litter of Pigs, or with young, 3 premiums, ...	6	5	4
Pigs, best pair, pigged on or after 1st March last, 3 premiums,	4	3	2
Cheese, best 2, 15lbs, each, this year's make, 3 premiums, . .	6	5	4
Butter made in the county, firkins 28lbs, 4 premiums, . . .	7	6	5	4
Fresh Butter, 3lbs. in quarters as prepared for market, 3 prems.	4	3	2

RULES AND REGULATIONS

For the guidance of Competitors at the Show of the Agricultural Society for the County of Hochelaga.

1st. No person shall be entitled to receive more than one premium in the same class.

2nd. No person shall be qualified to receive premiums except Subscribers.

3rd. No person obtaining a premium on a Male Animal, shall refuse the use of such Animal to a reasonable number of applicants, at a moderate charge, Bulls, Boars, and Rams, not over one dollar each.

4th. No Brood Mare shall be entitled to a premium, unless her Colt of the present season be brought with her.

5th. No Cow shall be entitled to a premium, unless the Judges are satisfied that she has produced a calf on or after the first of January last, or to be evidently with calf at the time of the show.

6th. The Judges shall be at liberty to withhold any premium if they consider the animal deficient in merit.

7th Competitors for any premium must cause their names and places of residence, together with a description of the Animal or Article, to be left in writing with the Secretary, at his Office, No. 72, St. François Xavier Street, previous to the 10th September, or upon the ground, by half-past Nine o'clock on the morning of the Exhibition. No entries will be permitted after that time.

8th. No one except such as have paid subscription will be allowed to compete for any premium.

☞On the day of the Exhibition, a FAIR will be held for the sale and purchase of Live Stock, Produce, &c., &c.

Admittance from Sherbrooke, St. Charles Barromee and St. Urbain Streets.

JAMES SMITH,
Secretary-Treasurer

Persons having good ground near the city, and willing to permit the Annual Ploughing Match to come off thereon, are requested to notify the Secretary as soon as possible.

The Premiums awarded for current year, will be paid on the day of the Exhibition.

It is requested that competitors will be on the ground as early as possible, in order that all the arrangements be completed before the Judges commence to award the Premiums.

The Judges on Crops commence their inspection immediately. Intending competitors are therefore requested to enter their Names.

BUREAU OF AGRICULTURAL STATISTICS,
25th July, 1856.

To Emigrants and others seeking

LANDS FOR SETTLEMENT.

The PROVINCIAL GOVERNMENT have recently opened out THREE GREAT LINES OF ROAD, now in course of completion, and have surveyed and laid out for Settlement the Lands, through, and in the vicinity of which those Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "THE OTTAWA AND OPEONGO ROAD," THE ADDINGTON ROAD and "THE HASTINGS ROAD."

THE OTTAWA AND OPEONGO ROAD

Commences at a point on the Ottawa River, known as "Ferrall's", a little above the mouth of the Bonchere River, and runs in a Westerly direction, passing through the northerly part of the County of Renfrew.

It is intended to connect this road with a projected line of road known as "Bell's Line" (leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Brudnell, at a distance of about 53 miles from the River Ottawa, forming with "Bell's Line," a great leading road, or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for settlement a vast extent of rich and valuable land.

This road, and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Lands in this district is Mr. T. P. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from MONTREAL up to the Ottawa River to a place called Bonchere Point, and thence by land come twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

THE ADDINGTON ROAD,

Commencing in the Townships of Anglesea, in the northern part of the county of Addington near the Village of Flints Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 35 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is Mr. E Perry, who, for that purpose, is now resident at the Village of FLINTS MILLS. The outlines of five townships of very superior land are already surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka, and between it and the River Madawaska. The Townships are called respectively Abinger, Denbigh, Ashley, Effingham, Anglesea, and Barrie.

The direct route to this Section is by way of KINGSTON, Canada West, thence to NAPANEE, either by land or Steamboat, and thence North to the Township of Kaladar, and the Village of FLINTS MILLS where Mr. Perry resides.

THE HASTINGS ROAD,

Almost parallel to the Addington Road, and at a distance West from it of about 32 miles is the HASTINGS ROAD. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the OTTAWA AND OPEONGO ROAD and its extensions.

The Government Agent is Mr. M. P. Hayes, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order—The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles, and money is now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce, as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this Section, which is easily accessible, is by KINGSTON, Canada West, thence by Steamboat up the Bay of Quinte to BELLEVILLE, 56 miles—and thence by a good Road to HASTINGS, 28 miles.

In order to facilitate the Settlement of the Country and provide for keeping in repair the Roads thus opened: the Government has authorized Free Grants of Land along these Roads, not to exceed in each case ONE HUNDRED ACRES, upon application to the Local Agents, and upon the following.

CONDITIONS:

That the Settler be eighteen years of age.

That he take possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years,—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of settlement are duly performed; after which accomplishment only shall the settler have the right of obtaining a title to the property. Families comprising several settlers entitled to lands, preferring to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot on which they live) provided that the required clearing of the land be made on each lot. The non-accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every information to the intending Settler.

The LOG-HOUSE required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived Settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The Lands thus opened up and offered for settlement, are, in sections of Canada West, capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce, grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighborhood of these three roads will be found to be very similar in quality and character, and covered with every variety of Timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for Manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet,—will produce a Barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate, is about FOUR POUNDS Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a

capital of from £25 to £50, according to the number of his family, will soon make himself comfortable, and obtain a rapid return for his investment. The single man, able and willing to work, needs little capital, besides his own arm and axe—he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these Districts is essentially good. The snow does not fall so deep as to obstruct communication; and it affords material for good roads during the winter, enabling the farmer to haul in his Firewood for the ensuing year from the woods, to take his produce to market, and to lay in his supplies for the future—and this covering to the earth, not only facilitates communication with the more settled parts of the District, but is highly beneficial and fertilizing to the soil.

In all the localities above named, whereever Settlers have surplus produce, there is a good market for it near to them—farm produce of all kinds being in great demand by the Lumber or Timber Merchants, who are carrying on extensive operations through-not these parts of the country.

According to the ratio of progress which Canada West has made during the last ten years, the value of property on an average doubles within that period; irrsepective of any improvements which may have been made by the Settlers.

In many Counties the value of Land, once opened for settlement has increased FIVE-FOLD in the period named, but the average value of such land, according to the statistics of Canada West DOUBLES EVERY TEN YEARS in the mere lapse of time, exclusive of any expenditure thereon—and it is not too much to expect that this ratio will not diminish for generations to come.

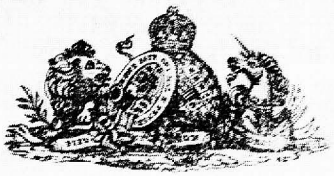
The Sections of Country opened by these roads lie in and to the Southern part of the Great Ottawa Region, stretching from and beyond them to the shores of Lake Huron, to Lake Nipissing, and to the Ottawa River—an immense extent of country whose resources are now seeking and will rapidly obtain development.

THE OTTAWA COUNTRY, lying south of Lake Nipissing and of the great River Ottawa, and embracing a large portion of the land offered for settlement, is capable of sustaining a population of EIGHT MILLIONS OF PEOPLE, and it is now attracting general attention, as the more western portions of Canada are being rapidly filled up;

The Parliament of Canada in its last Session, incorporated a company for the construction of a Railway to pass through this Ottawa country from the Shores of Lake Huron to the City of the Ottawa, and thence Eastward.

A survey of the River Ottawa and the neighbouring Country has been undertaken, and will be completed in the present year: its principal object being to ascertain by what means the River Ottawa can be rendered navigable and connected with Lake Huron so as to enable vessels to pass by that route from the most Western Waters into the River St. Lawrence and the Ocean. These projected works are alluded to, in order to show that the attention of the Government, Parliament and People of Canada has been fixed upon this important portion of the Province.

P. M. VANKOUGHNET,
Minister of Agriculture, &c.



Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the undermentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODDRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl, (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

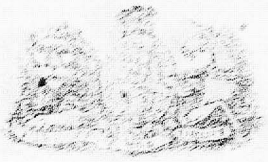
8th Range.

Lots 1 to 13 incl. (100 each,) 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68,) 6 (69), 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100), 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120) 48 (122), 49 (80).

5 ins.



BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvements to which the Fund is applicable is close at hand it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows:—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch. 159, and not already apportioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of those Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified.

W. H. LEE, C. E. C.
P. M. VANKOUGHNET,
6 ins. Minister of Agriculture.

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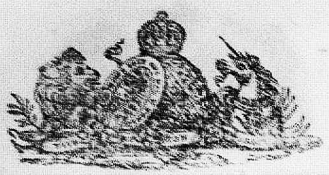

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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 6, Montreal, October, 1856. **POSTAGE FREE.** **Price 2s 6d per annum, in advance.**

Journal du Cultivateur.

Board of Agriculture for Lower Canada.

MONTREAL, Wednesday, *Sept. 3rd*, 1856.

The Board met this day at 11 o'clock, A. M.:

Present—R. N. Watts, Esq., President of the Board; E. F. DeBlois, Esq., Vice-President; Major Campbell, C. B., C. Taché, M.P.P., P. B. Dumoulin and B. Pomroy, Esqrs.

The President having taken the Chair, the Secretary submitted a list of the several subjects coming before the Board for their consideration, with all the documents connected with each—also the accounts and correspondence.

1. Letters from Wm. Hutton, Esq., Secretary Bureau of Agriculture, in relation to the amount of Government allowance to the County Agricultural Societies.

The Secretary was instructed to inform the Minister of Agriculture, that it is the opinion of the Board that all Societies which were organized under and had complied with the provisions of the Act 16 Vic. chap. 18, previous to the 19th of June, 1856, ought to be paid according to that Act; those Societies formed afterwards to be paid according to the amended Act, dated 19th June, 1856.

2. Applications from the County of Argenteuil Agricultural Society.

On this application the following resolution was passed unanimously:—It is the opinion of this Board, first, that the legislation in the old Acts relating to the encouragement of agriculture, as in the new law of the last session, had the intention to grant only one allowance to each county each year. 2. That the grant to the Societies formed for the year 1856, and the rights these Societies have to the sum of £250, for the year 1856, are in no way changed by the amendment of the last session. 3. That the Counties of the new Electoral Division, in which there was no Agricultural Society existing, and which have organized a Society previous to the 1st of August last, are from this day entitled to receive the government allowance to the amount of £200. 4. That the Counties in which such old Societies will cease to exist on the 1st January, 1857, should organize their new Societies at the time fixed by the old law.

Several applications for legislative grants for Societies formed under Act 19 Vic. chap. 47, were taken up, and it was ordered by the Board, that all those new Societies formed under the amended Act 19 Vic. chap. 47, and passed June 19th, 1856, and which have complied with the formalities of the law, are to be reported to the Bureau of Agriculture as entitled to the legislative allowance, and those who have not complied are to be notified of the reason why their application cannot be entertained.

The following Societies were reported as having duly conformed, viz:—

3. County of Drummond Agricultural Society, No. 2.

4. County of Jacques Cartier, Agricultural Society.

5. County of Broome Agricultural Society.

6. County of Woolf Agricultural Society.

7. County of Rimouski Agricultural Society.

8. Electoral Division of Three Rivers Agricultural Society.

9. An applicatition has been made by the County of the Ottawa Agricultural Society, but it is not to go into operation for the current year.

10. The County of Beauharnois Agricultural Societies may make arrangements amongst themselves, for the current year, but if there is a difference of opinion between them the Board must divide the legislative grant according to law.

11. The time for receiving Entries of Stock, &c., for the Provincial Exhibition at Three Rivers, was extended to Saturday, the 6th of September, instant.

12. Upon the application to the Board from the Local Committee, at Three Rivers, for some allowance towards paying the expenses of a Band for the Exhibition, the Board consented to give the same amount as they gave for a similar object at Sherbrooke last year, provided the band should be in attendance upon the ground.

13. Wm. Evans, Jr., applied to the Board for space under cover at Three Rivers for seeds, implements, &c., which he proposed to exhibit. The Secretary is authorised to see that space under cover is provided for such implements as would suffer from exposure.

14. Mr. Evans, the Secretary and Treasurer, having applied for an increase of salary, the Board ordered that Mr. Evan's salary should be one hundred and fifty pounds currency, per annum, to commence from the 1st of January, 1856.

15. Mr. Chagnon, Assistant Secretary, having made a similar application, the Board ordered that Mr. Chagnon should have a salary of one hundred pounds per annum, commencing from the 1st of January, 1855.

The entries of live stock, products, &c., and other matters connected with the Provincial Exhibition at Three Rivers were brought before the Board, but in consequence of extending the time for receiving entries, it was not considered necessary to count the entries already made, until the expiration of the extended time.

The Board appointed judges for the several classes enumerated in the prize list, and instructed the Secretary to address letters to each, stating the class in which they were appointed to act at the exhibition, and resquesting them to meet at the office of the Secretary, upon the exhibition ground at Three Rivers, on Wednesday morning, the 17th instant, at nine o'clock, A. M.

The Board apportioned amongst its different members the immediate superintendance and direction of the several departments at the ensuing exhibition.

The Secretary was instructed to have the large tent, flags, and other articles required for the exhibition, forwarded to Three Rivers the ensuing week, and also, to prepare badges for the members of the Board, the judges, and a few complimentary badges as usual,—all to be ready in time.

The Secretary was instructed to write to the President of the Montreal Horticultural Society, requesting that the Secretary of that Society, Mr. Schmidt, may be permitted to place his services at the disposal of Mr. DeBlois, Vice-President of the Board of Agriculture, who takes charge of the Horticultural Department during the approaching Provincial Exhibition.

14. The Secretary was instructed to write to the Contractors for the buildings at Three Rivers, and to the Secretary of the Local Committee, acquainting them that the President, Vice-President and Secretary of the Board would be at Three Rivers on Tuesday, the ninth September instant, and would meet the Local Committee upon the Exhibition ground at ten o'clock, A.M.

There being no more business before the Board the meeting separated.

By Order,

WM. EVANS,

Sec-Treas., Board of Agiculture.

Montreal, Sept. 4th, 1856.

——:o:——

THREE RIVERS, }
Tuesday, Sept. 16, 1856 }

The Members of the Board of Agriculture who had arrived at Three Rivers, assembled this day at the Committee Room upon the Exhibition Ground, where they were met by several members of the Local Committee, and the Local Secretary. A general inspection of the preparations was then made, and the stalls for horses and cattle, and the pens for sheep and swine were all numbered, and marked off in separate classes and sections, according to the Prize List and Entry Book.

The Building for Industrial Products was handsomely fitted up, and also the large Tent for Horticultural Products. The whole of the preparations were completed on Tuesday evening, and the gentlemen of the Board and of the Local Committee were each assigned the Department which they were to superintend.

On Wednesday morning at 6 o'clock, the gentlemen who had the charge of the several gates were at their posts, to admit live stock, and all other products. Each had their Books of entries, and when admission orders were presented at the several gates, the gentleman in charge, put a number upon the admission order, corresponding with the number of the animal in the entry Book, and a man in waiting conducted them to the number in the stalls or pens, as the case might be. There was no confusion, and 1000 head of cattle might be regularly placed in their proper stalls and pens in two hours, if they had been brought to the gates for admission. There was a gate for horses, one for cattle, one for sheep and swine, and one for general products.

At 12 o'clock precisely all the gates were closed, and the Books prepared for the several Judges were handed to them, and the Member in charge at each gate, attended the Judges of the stock admitted at each gate, to give any explanation required. When the Judges had made their awards and signed and delivered their Books to the Secretary, the Prize tickets were made out, and the gentlemen in charge of each class had the Prize Tickets affixed to the animals awarded premiums. The Judges in the Dairy and Field Productions, and those upon Agricultural Implements, upon Poultry, Industrial and Horticultural Productions were also handed their Books, and gentlemen of the Board and Local Committee, had charge of each Department, as in the live stock. All the awards were rendered during Wednesday, the first day of the Exhibition, and the prize tickets placed on the articles awarded prizes that evening or early the following morning, and without any trouble or confusion. No tickets of admission were sold on the first day. On Thursday morning the office for the sale of tickets was opened, and put in charge of gentlemen of the Local Committee, who kindly undertook that duty. The attendance of visitors however, was by no means numerous, and it was observed with regret that very few Canadian farmers, compared with what might be expected were present. The Hon., the Minister of Agriculture, Mr. Vankougnet arrived upon the ground about two o'clock, and made a general inspection of the live stock, products, &c. He expressed himself much pleased with the arrangements, and with the Exposition in general, though he must have seen with surprise the thin atttendance of visitors, compared with the attendance at the Agricultural Exhibitions of Upper Canada. The President of the Boardof Agriculture of Upper Canada E. Thomson Esq.,and the Secretary, Professor Buckland,attended as a Deputation from the Board. A Deputation from the New York State Agricultural Society was also present, and several Agriculturists from Upper Canada. The preparations made were on rather an extensive scale, but the stalls and pens for cattle and sheep, were not fully occupied, though there was not a stall or pen prepared and numbered, except for stock that had been entered for Exhibition, and not subsequently brought forward, a practice which is very unjustifiable, causing unnecessasy expense in preparing accommodation for live stock, that are not brought to the Exhibition. In England parties who enter stock, and do not show them afterwards, have to pay a proportion of the expenses of preparation, and very properly. Many of the visitors to the late Exhibition, thought it strange to inclose so large a space, and construct such a number of sheds and pens, when the live stock, and visitors to see them, were so disproportioned to the preparations made. It would however, not have been complimentary to that long settled, populous, and fine section of Lower Canada, if the preparations had been less extensive than those at Sherbrooke last year, where the country is comparatively newly settled, has not a dense population and is not so accessible as Three Rivers. If the preparations at Three Rivers were made upon a narrow and contracted scale, it would be an indication that the Board of Agriculture, had entertained doubts of the capabilities of that section of the country to make a creditable Exhibition, or show satisfactory proofs of the progress of Agricultural improvement. On the contrary, the Board had the most favourable anticipations, and particularly from the numerous entries made, they expected a very large show of live stock, and other products, and a large number of visitors from the surrounding counties,though these expectations were not realized. The Prize Lists were sent to all the Agricultural Societies in Lower Canada, in February last for distribution, and all the Counties in that section of the country have organized one or more Agricultural Society in each, and have received the full Government allowance of £250, for each County, for the last four years. Under such circumstances it is difficult to understand, why these Counties and Agricultural Societies should not have been better-represented at the late Exhibition. If they had not live stock or other products which they would wish to exhibit or compete with, they might at all events, have manifested some degree of interest in such an

Exhibition, and have come to see it, when it was fixed to take place at Three Rivers, for their convenience, and principally for the benefit of that section of the country. If the agriculturists themselves will not be interested in Exhibitions of live stock, and the other products of husbandry, how can we expect that other classes of the community will be interested or visit them. If we have no desire to witness the results of an improved system of husbandry, or to see and examine improved Agricultural Implements, and labour saving machines, it can scarcely be supposed that we have any wish to introduce any change or improvement in our agriculture, our live stock, or in the implements we make use of upon our farms, however advantageous it might be to do so. At this time of general progress we should not close our eyes and hold back, but endeavour to see and examine this progress, and if possible go on with it, if we ascertain satisfactorily that it would be for our advantage to do so. The Legislature have provided liberally for the encouragement of agriculture, and this provision is annually distributed amongst the agriculturists, and the Annual Provincial Exhibitions are also provided for by the Legislature for collecting together the evidences of the progress of improvement, resulting from this continued liberal encouragement--and those who participate in the Government allowance, are under an obligation to support by their presence at least, the Provincial Agricultural and Industrial Exhibitions—as they do in the United States and in the Upper Canada. Previous to the Exhibition arrangements were made with the Steamboat and Rail-road Officers who very liberally consented to convey passengers, live stock, and productions, to and from Three Rivers, charging only one fare.

The show of Horses was numerous, and many fine animals were on exhibition, but it appeared strange, that there was very few, if any, of what is known as the pure Canadian breed of horses on the ground.

The show of neat Cattle were of mixed quality, and of the pedigree breeds there were not many exhibited. An imported Devon bull, belonging to Mr. Longley of Shefford, was a beautiful animal, and would be sufficient to recommend this breed. There is a great difference between a perfect and pure specimen of any of the choice breeds and specimens that are not pure or perfect in shape. The Ayrshire cattle were well and numerously represented, but pedigrees are not required for this breed to entitle them to take premiums.

Sheep were not numerous, and probably two thirds of the pens prepared and numbered for parties who entered sheep, were unoccupied. The show of sheep was by no means a fair specimen of that description of stock in Lower Canada, and was confined to very few exhibitors, as will appear by the awards of the Judges, six or seven of the pens were occupied by the sheep of Mr. Millar, of Pickering, Upper Canada, and it would be desirable that we should have a much larger number from that country next year of such fine sheep.

The show of Swine was numerous, and some animals of very superior quality were upon the ground. In this stock, there was a better show, than at any former Exhibition held at the instance of the Association. We have ample means of improving the Swine in Lower Canada, if agriculturists will avail themselves of the means in their power of obtaining good breeds.

The Dairy and Field Productions were numerous and of excellent quality, highly creditable to Lower Canada, as were the Products of Horticulture exhibited under the large Tent.

The Industrial Department I am unable to report upon, as regards the merits of the articles exhibited, not being able to give much attention to that department of the Exhibition.

The Agricultural Implements exhibited were more numerous and of better quality than at any of our former Exhibitions. This department shewed a greater advance in improvement than any other at the Exhibition, and gave ample proof that the very best description of Agricultural Implements are attainable in Lower Canada, as will appear by the list of prizes awarded.

Permission having been given to admit a Thrashing Mill, one horse-power, brought forward by Mr. Lavallette of Sherrington, though not entered in time, it was put to work upon the ground and found to operate very satisfactorily, and the machine was generally approved of for its simplicity and moderate price.

A Mowing and Reaping Machine of Mannings, was also admitted, though not regularly entered, and was much admired for its lightness and appearance altogether. There was, however, no means of testing it in operation, but the President of the Agricultural Association, B. Pomeroy, Esq., who has one of them working for the last two years, gave it a very good character—Mr. Hagar of Montreal is the Agent.

It may be proper to suggest to exhibitors at future Exhibitions, that it would be desirable not to show live stock of inferior quality. Strangers who visit our Exhibitions must be surprised to see very inferior animals brought forward for Premiums, and attribute it either to the want of any better animals, which is not the fact, or to the want of judgment of what should constitute a good or valuable animal. A mixture of inferior animals at a great Exhibition, produces a very bad effect upon the whole affair, and should be avoided if possible. In England, very inferior animals are excluded by the Rules of their Exhibitions. Objections have been made to some of the stock awarded at Three Rivers, as utterly unworthy of such a mark of excellence, and I fear there was just grounds for such objection.

LIST OF PRIZES

AWARDED AT THE

Agricultural and Industrial Exhibition at Three Rivers.

CLASS 1.—CATTLE.

JUDGES.—Wm. Rhodes, Jas. Anderson and Jas. Gillespie.

Durhams.

Sec. 1 Best aged Bull, Cyrus Baily, Eaton.
2nd do —S. Baker & Son, Dunham.
3rd do —Daniel Westover, do.
4th do —Irvine Somerville, Champlain
Sec. 2 Best 2 years old Bulls—Chas. Sheppard, Riviere David
No further Competition.
Sec. 3 Best 1-year old Bull, G C Robinson, Shefford
No further Competition.
Sec. 4 Best Cow—Thomas Dunkan, Leeds
2nd do —Daniel Westover, Dunham
3rd do —John Walsh, Quebec
4th do —Daniel Westover, Dunham
Sec. 5 Best 2-year old Heifer—J Walsh, Quebec, 3rd Prize.
Sec. 6 Best 1-year old Heifer—Daniel Westover, Dunham
2nd do —S Baker & Son, do.
3rd do —Ed Longley, Shefford

Hereford.

Sec. 7 Best aged Bull—L K Benton, Stanstead
No Competition in Sections 8, 9 and 10.

Devonshire.

Sec. 11 Best aged Bull, E Longley, Shefford
2nd do —Amos Kezer, Hatley.
Sec. 12 Best 2 years old Bull—No competition.
Sec. 13 Best Cow —L W Decker, Roxton Falls
2nd do —E Longley, Shefford
Sec. 14 Best 2-year old Heifer—A Kimpton, St Therese
2nd do do —L W Decker, Roxton Falls
3rd do do — E Longley, Shefford

Ayrshire.

Sec. 15 Best aged Bull— — Wickham, Quebec.
2nd do —John Oswald, St Therese
3rd do —Michael Scullion, Quebec
4th do —J W Dunscomb, do
Sec. 16 Best 2-yr old Bull—A Kimpton, St Therese
2nd do —Hochelaga Ag. Society
3rd do —Thomas Dunkan, Leeds
4th do —Dougall McKenzie, Inverness
Sec. 17 Best 1-year old Bull—Hochelaga Ag. So.
Sec. 18 Best Cow, James Logan, Montreal
2nd do —J W Dunscomb, Quebec
3rd do —George Wakeham, do
4th do —John Lane, do
5th do —James Logan, Montreal
Sec. 19 Best 2-year old Heifer—Js Logan, Montreal

2nd do do —John Dods, do
3rd do do —A McDonald, Becancour
Sec. 20 Best 1-year old Heifer—Js Logan, Montreal
2nd do do do do
3rd do do Geo. Wakeham, Quebec
4th do do —Hy Clarke, Three Rivers

Grade Cattle.

Sec. 21 Best Cow, Angus McDonald, Becancour
2nd do —Henry Moss, Quebec
3rd do —Thomas Dunkan, Leeds
4th do —Amos Kezer, Hatley
5th do —Ed Longley, Shefford
6th do —R Harrower, Sorel
7th do —Angus McDonald, Becancour
8th do —H W Trigge, Nicolet
9th do —S Baker & Son, Dunham
Sec. 22 Best 2-yr old Heifer—E Longley, Shefford
2nd do —S Baker & Son, Dunham
3rd do —Geo. Wakeham, Quebec
4th do —P McDonald, Wickham
5th do —Ed Longley, Shefford
6th do — do do
7th do —Angus McDonald, Becancour
8th do — do do do

Canadian.

JUDGES.—Jos. Lanouette, Jos. Laporte and J. Caron.

Sec. 23 Best aged Bull—Antoine Mayrand, Becancour
2nd do —E Beauchemin, St Monique
Sec. 24 Best 2-year old Bull—B T Clough, St Pierre Celestin
No further Competition.
Sec. 25 Best 1-year old Bull—Henry Moss, Quebec
2nd do —M Gelinas, Yamachiche
3rd do —T A Lambert, Becancour
Sec. 26 Best Cow—Angus McDonald, Becancour
2nd do —F X Hamel, Quebec
3rd do —D G LaBarre, Trois Rivières
4th do —F X Hamel, Quebec
5th do — do do
Sec. 27 Best 2-year old Heifer—J A Turgeon, Terrebonne
2nd do —Michael Scullion, Quebec
3rd do —John Walsh, Cap Rouge
4th do —F X Hamel, do
Sec. 28 Best 1-yr old Heifer—Henry Moss, Quebec
2nd do —Thos Burns, Three Rivers
3rd do —F X Hamel, Quebec
4th do —John Walsh, Cap Rouge

Fat Cattle.

Sec. 29 Best Ox or Steer—A Kimpton, St Therese.
No further Competition.
Sec. 30 Best Cow—A Kimpton, St. Therese
2nd do —S Baker & Son, Dunham
3rd do —Chs Vaigneau, Rivière du Loup
4th do —Clivier Gouin, Trois Rivières

Working Oxen.

Sec. 31 No Competition.

Steers.

Sec. 32 Best Pair of 3 years old Steers—No Competition.
Sec. 33 No Competition
Sec. 34 Best 2-yr old Steer—L W Decker, Roxton Falls
2nd do —S Baker & Son, Dunham

Baron Longueuil's Special Prize.

Best Hereford Bull, not over 4 years—L. K. Benton, Stanstead.

Extra Stock.

A Devon Bull Calf and a Heifer were shown and highly recommended, belonging to L. W. Decker, Ruxton Falls; also Durham Bull Calf, recommended, belong to S. Baker & Son, Dunham.

CLASS II.—SHEEP.

JUDGES.—Robt. Heriot, Thomas Dawes and Jean Beaubien.

Leicester.

Sec. 1—Best aged Ram—James Somerville, Lachine
2nd do —John Oswald, St. Therese
3rd do —Wm. Miller, Pickering U C
4th do — do do
5th do — do do
Sec. 2—Best Shearing Ram—No Competition.
Sec. 3—Best 3 aged Ewes—James Somerville, Lachine
2nd do — do do
3rd do — do do
4th do — Thos Dunkan, Leeds
5th do —John Oswald, St. Therese
Sec. 4—Best 3 Shearling Ewes—No competition.

South Down.

Sec. 5—Best Ram—B Pomeroy, Compton
2nd do — do do
3rd do —F X Hamel, Quebec
Sec. 6—Best Shearing Ram—No Competition
Sec. 7—Best 3 aged Ewes—B Pomeroy Compton
No further Competition.
Sec. 8—Best 3 Shearling Ewes—B Pomeroy, do
No further Competition.

Merino and Saxon.

Sec. 9—Best aged Ram—J D Parker, Hatley
2nd do —Amos Kezer, do
3rd do — do do
Sec. 10—Best Shearling Ram—J D Parker, do
2nd do do do
Sec. 11—Best 3 aged Ewes—do do
2nd do —do do
Sec. 12—2nd prize 3 Shearling Ewes—J D Parker, Hatley

Fat Sheep.

Sec. 13—Best 3 Fat Wethers—Thos. Dunkan, Leeds
2nd do — do do
Sec. 14.—Best 3 Fat Ewes do do
2nd do — do do

CLASS III.—SWINE.

JUDGES.—Eus. Prudhomme, O. Gouin and Daniel Westover.

Large Breed.

Sec. 1—1st prize, Best Boar 1 year, John Scott, Montreal
2nd do—Jean Marie Allard, St Henry, Mascouche.
3rd do—Joseph Dansereau, Vercheres
4th do—Thos Bourne, Three Rivers
Sec. 2—1st prize—Best Sow over 1 year, Leon Laporte, Pointe aux Trembles
2nd do—Thos Dunkan, Leeds
3rd do—Henry Moss, Quebec
4th do—Madore Gètinas, Yamachiche
Sec. 3—1st prize—Best Boar under 1 year, Hochelaga Agricultural Society, Montreal.
2nd do—Thomas Dunkan, Leeds
3rd do—Jos Dansereau, Vercheres
4th do—Henry Moss, Quebec
Sec. 4—1st prize—Best Sow under 1 year, John Oswald, St Therese
2nd do—F X Hamel, Quebec
3rd do—Ant Mayrand, Becancour
4th do—Jos Paquin, Maskinonge

Small Breed.

Sec. 5—1st prize—Best Boar over a year, L W Decker, Roxton Falls
2nd do—Rev Mr Villeneuve, Montreal
3rd do—T A Lambert, Becancour
4th do— A Kimpton, St Therese
Sec. 6—1st prize—Best Sow over 1 year, F X Hamel, Quebec
2nd do—James Logan, Montreal
3rd do—Geo. Wakeham, Quebec
4th do—L W Decker, Roxton Falls
Sec. 7—1st prize—Best Boar under 1 year, Joseph Dansereau, Vercheres
2nd do—Leon Laporte, Pointe aux Trembles
3rd do—L W Decker, Roxton Falls
4th do—R Harrower, Sorel
Sec. 8—1st prize—Best Sow under 1 year, Leon Laporte, Pointe aux Trembles
2nd do—Jos, Dansereau, Vercheres
3rd do—L W Decker, Roxton Falls
4th do—R Harrower, Sorel

CLASS IV.—HORSES.

JUDGES.—Edward Quinn, Chs. S. Baker and Eustin Plaird.

Sec. 1. 1st prize, Best Heavy Draught Stallion, R Charles, Huntingdon
2nd do Jno Alexander, Mascouche
3rd do James Johnson, Elgin
4th do G Alfred Alsopp, Cap Sante

Sec. 2. 1st prize, Best Light Draught Stallion, Peter Cook, Drummondville
2nd do Jas Muir, Sault au Recollet
3rd do Samuel Burns, Stanstead
4th do Thos Kay, Montreal

Sec. 3. 1st prize, Best Canadian Stallion, Ed Caron, Riviere du Loup
2nd do Henri Gauthier, Montreal
3rd do C Valois, Lochine
4th do John Oswald, St Therese

Sec. 4. 1st prize, Best 3 years old Stallion, Louis Brousseau, Laprairie
2nd do John Kerr, Godmanchester
3rd do H Gauthier, Montreal
4th do Jos Terrien, Ste Monique

Sec. 5. 1st prize, Best 2 years old Stallion, John McGlynn, Montreal
2nd do Pierre Dansereau, Vercheres
3rd do G Lamirande, Riviere du Loup
4th do A Kimpton, Ste Therese

Sec. 6. 1st prize, Best Brood Mare and Foal, Pascal Gagnon, Sault au Recollet
2nd do John Gallis, Elgin
3rd do A Kimpton, Ste Therese
4th do J B Panneton, Gentilly
5th do Alex. McColl, St Joseph
6th do Jos Fortin, Riviere du Loup

Sec. 7. 1st prize, Best 3 years old Filly, Archd Ogilvie, Montreal
2nd do Prudent Pratt, Ste Marguerite
3rd do A Kimpton, Ste Therese
4th do G B Clement, Ste Monique

Sec. 8. 1st prize, Best 2 year old Filly, J. Allan, Pointe aux Trembles,
2nd do Pierre Chicoine, Vercheres
3rd do Aug Rousseau, Ste Monique
4th do Pierre Vigneau, St. Gregoire

Sec. 9 1st prize, Best pair Draught Horses, Jos Paquin, Maskinonge
No second prize.
3rd do O Duval, Three Rivers

Sec. 10 1st prize, Best pair Carriage Horses, H. Doucet, Becancour.
No further Competition.

Sec. 11 1st prize, Best Saddle Horse, H. Douglas Moore, St. Armand
2nd do J. Somerville, Lachine
3rd do W McGiveny, Durham
4th do J Cloutier, Three Rivers

Thorough Bred Horses.

Secs. 12, 13, 14 and 15 No Competition.

CLASS V.—DAIRY PRODUCE.

JUDGES.—W. C. Hanson, L. E. Dubord and Joseph Panton.

Butter.

Sec. 1 Best Firkin Butter, Frs. Manseau, Nicolet
2nd do A Panneton, Three Rivers
3rd do J Laporte, Point aux Trembles
4th do Leon Laporte, do
5th do Daniel Westover, Dunham
6th do Ang. M'Donald, Becancour
7th do Thos Johnston, Wickham
8th do Robt Brack, Drummondville
9th do Henry Trigg, Nicolet
10th do A. Kimpton, St. Therese

Cheese.

Sec. 2 Best Cheese, Angus McDonald, Becancour
2nd do Squire Colby, Hatley.
3rd do Jas Allan, Pointe aux Trembles
4th do David Laurent, Montreal
5th do Simon Bean, Hatley
6th do Hilaire Girard Varennes
7th do Hugh Allan, Pointe-aux-Trembles
8th do S Baker & Son, Dunham
9th do Amos Kezar, Hatley
10th do Mrs L Little, do

CLASS VI.—SUGAR FROM MAPLE OR BEET.

JUDGES.—W. C. Hanson, L. E. Dubord and Joseph Panton.

Sec. 1 Best Maple Sugar, Amos Kezar, Hatley
2nd do Hilaire Girard, Varennes
3rd do Francois Charette, Nicolet

Sec. 2 Best Sample Sugar made from the Beet, No competition.

CLASS VII.—FIELD PRODUCTIONS.

JUDGES.—W. C. Hanson, L. E. Dubord and Jos. Panton.

Sec. 1 Best 4 minots W. Wheat, A. Kimpton, St. Therese.
No other competitors.

Sec. 2 Best 4 minots Spring Wheat, James Logan, Montreal
2nd do Robt Brack, Drummondville
3rd do T Johnston, Wickham

Sec. 3 Best 4 minots Barley, James Logan, Montreal
2nd do Squire Colby, Hatley
3rd do Jesse Kezer, Hatley

Sec. 4 Best 4 minots Rye, A Kimpton, St. Therese.
2nd do H Panneton, St. Marguerite
3rd do Hub Girard, Pointe du Lac

Sec. 5 Best 4 minots Oats, Wm Evans, Jr Montreal
2nd do Hilaire Girard, Varennes
3rd do Amos Kezar, Hatley

Sec. 6 Best 4 minots Peas, Andre Martin, Pointe du Lac
2nd do P McCabe, Three Rivers
3rd do P Beauchemin, St. Monique

Sec. 7 Best 4 minots Marrow Fat Peas, W. Evans, Jr, Montreal
2nd do A Kimpton, St Therese
3rd do None.

Sec. 8 Best 4 minots Horse Beans, Wm Evans, Jr, Montreal
2nd do James Logan, Montreal

Sec. 9 Best 4 m. Indian Corn in the ear, L Laporte, Pointe-aux-Trembles
2nd do James Logan, Montreal
3rd do Jesse Kezar, Hatley.

Sec. 10 Best 2 minots White Beans, W. Evans, Jr, Montreal
2nd do Amos Kezer, Hatley
3rd do L K Benton, Stanstead

Sec. 11 Best 2 minots Timothy, Thomas Badham, Drummondville
2nd do W Evans, Jr, Montreal
3rd do Jos Fortin, River du Loup

Sec. 12 Best 2 minots Clover Seed, Hilaire Girard, Varennes
2nd do W Evans, Jr, Montreal
3rd do Hilaire Girard, Varennes

Sec. 13 None.

Sec. 14 Best 2 minots Flax Seed, A Kimpton, St Therese
2nd do A Turgeon, Terrebonne
3rd do Chs Benoit, La Baie

Sec. 15 None.

Sec. 16 Best 26 lbs Swedish Turnip Seed, W Evans, Jr, Montreal
2nd do None.
3rd do do

Sec. 17 Best bale Hops, P Fallon, Lachine
2nd do L K Benton, Stanstead
3rd do W Brack, Wickham

Sec. 18 Best bag Potatoes, 1¾ M P Beauchemin, St. Monique
2nd do W Faris, Sorel
4th do J McDougall, Three Rivers

Sec. 19 Best 12 Swedish Turnips, John McDougall, Three Rivers
2nd do M. Scullion, Quebec
3rd do R Harrower, Sorel

Sec. 20 Best 12 W Globe do, M Scullion. Quebec
2nd do E Beauchemin, St Monique
3rd do W Taylor, St Foy

Sec. 21 Best 12 Yellow Aberdeen Turnips, M Scullion, Quebec
2nd do W Taylor, St Foy
3rd do E Beauchemin, St Monique

Sec. 22 Best 12 Orange Carrots, James Logan, Montreal
2nd do J P Masse, River du Loup
3rd do W B Davidson, Montreal

Sec. 23 Best 12 Belgian Carrots, Leon Laporte, Pointe aux Trembles
2nd do Jas Allan, do
3rd do Jas Logan, Montreal

Sec. 24 Best 12 Mangold Wurtzel, Jas Cooper, Montreal
2nd do J Laporte, Pointe aux Trembles
3rd do Hilaire Girard Verennes

Sec. 25 Best 12 Yellow Globe Mangold Wurtzel, J Cooper, Montreal
2nd do Hen. Clarke, Three Rivers
3rd do Jos Frigon, St Leon

Sec. 26 Best 12 Sugar Beets, Jas Logan, Montreal
2nd do Hen. Clarke, Three Rivers
Sec. 27 Best 12 Kohl Rabi, B Davidson, Montreal
2nd do None.
Sec. 28 Best 12 Parsnips, M Scullion, Quebec
2nd do B Davidson, Montreal
3rd do Jas Logan, Montreal
Sec. 29 Best Large Squash for Cattle, Rev M Villeneuve, Montreal
2nd do None.
3rd do None.
Sec. 30 Best Broom Corn Brush, No Competition
Sec. 31 Best sample of Dressed Flax, C. Benoit, LaBaie.
2nd do None.
3rd do None.
Sec. 32 Best sample of Hemp, No Competition

Extra.

Best Buckwheat, Joseph Paquin, Pointe du Lac
2nd do André Martin, do

Report of Judges on Field Productions.

William Evans, Jr., of Montreal, Agricultural Implement and Seed Store, has exhibited very superior specimens of seeds and implements, which the Judges beg most respectfully to recommend to all farmers.

CLASS VIII.—AGRICULTURAL IMPLEMENTS.

JUDGES.—G. Douglas, Matthew Davidson and Alex. McPhelen.

Sec. 1 Best wooden plough, James Jeffrey, Montreal; second do, John Welsh, Quebec; third do, William Evans, Junior, Montreal.

Sec. 2 Best iron plough, James Jeffrey, Montreal; second do, James Patterson, Montreal; third do, Wm Evans, Jr, Montreal.

Sec. 3 Best sub-soil plough, Chas W Saunders, Three Rivers; second do, Wm Evans, Jr, Montreal.

Sec. 4 Best double mould plough, James Patterson, Montreal; second do, James Jeffrey, Montreal; third do, William Evans, Jr, Montreal.

Sec. 5 Best pair of harrows, James Jeffrey, Montreal; second do, William Evans, Jr. Montreal; third do, John West, Quebec.

Sec. 6 Best pair grass seed harrows, Wm Evans, Jr, Montreal.

Sec. 7 Best drill harrow, James Patterson, Montreal; second do, Wm Evans, Jr. Montreal.

Sec. 8 Best cultivator, Wm Evans, Jr, Montreal; second do, C W Saunders, Three Rivers.

Sec. 9 Best fanning mill, James Telfer, Chambly; second do, William Wilson, Chambly; third do, Peter McCabe, Three Rivers.

Sec. 10 Best horse power thresher, Wm Johnston & Co, Montreal; 2nd do, E P Robichon, Three Rivers.

Sec. 11 Best grain drill, James Roberinson Longue Pointe.

Sec. 12 No Competition.

Sec. 13 Best turnip drill, (3rd prize) Wm Evans, Jr, Montreal.

Sec. 14 No Competition.

Sec. 15 Best straw cutter, Wm Evans, Jr, Montreal; 2nd do Wm Evans, Jr, Montreal.

Sec. 16 Best root slicer, Wm Evans, Jr, Montreal.

Sec. 17 No Competition

Sec. 18 Best horse cart, James Jeffrey, Montreal; 3rd best do, F X Hamel, Quebec.

Sec. 19 Best hay cart, Loius Godin, Three Rivers

Sec. 20 and 21 No Competition.

Sec. 22 Best horse rake, James Telfer, Chambly; 3rd do, John McDougall, Three Rivers.

Sec. 23 Best hand rake, John Robertson, Longue Point; 2nd do, Wm Evans, Jr, Montreal.

Sec. 24 No Competition.

Sec. 25 Best mowing machine, John McDougall, Three Rivers.

Sec. 26 Best stump extractor, Robert St. Onge, St Leon.

Sec. 27 Potato digger, 3rd prize, L K Benton, Stanstead.

Sec. 28 and 29 No Competition.

Sec. 30 Best half doz hay forks, Wm Evans, Jr, Montreal, agent for David J. Millard; 2nd do, W m Brooks, Sherbrooke; 3rd do Wm Evans, Jr, Montreal.

Sec. 31 Best half doz manure forks, Wm Evans, Montreal, agent for David J. Millard; 2d, W Saunders, Three Rivers.

Sec. 32 Best half doz. hay rakes, Wm Evans, Jr, Montreal; 2nd, do do; 3rd, W Saunders, Three Rivers.

Sec. 33 Best half doz scythe snaths, C W Saunders, Three Rivers.

Sec. 34 Best grain cradle, C W Saunders, Three Rivers; second, best do, W m Evans, jr, Montreal.

Sec. 35. Best Ox yoke and bows, Wm Evans, jr, Montreal; second best do, L K Benton, Stanstad.

Sec. 36 No Competition.

Sec. 37 Best half doz iron spades, Wm Evans, Jr, Montreal; second do, C W Saunders, Three Rivers.

Sec. 38 Best half doz iron shovels, Wm Evans, Jr, Montreal.

Sec. 39. Best half doz narrow axes, C W Saunders, Three Rivers.

Sec. 40 Best agricultural implements not enumerated, P McCabe, Three Rivers.

41 Best horse hoe, Wm Evans, jr, Montreal; second do, Wm Evans, jr, Montreal

42 Best cheese press, James Telfer, Chambly; second do, Wm Evans, jr, Montreal.

Sec. 43 Best hand churn, Wm Evans, jr, Montreal

Sec. 44 Best set of dairy utensils, Wm Evans, jr, Montreal.

Sec. 45 Best potatoe harrow for harrowing drills, James Patterson, Montreal.

Sec. 46 Best collection of agricultural implements exhibited by manufacturer, James Jeffrey, Montreal.

Turnip cutter (recommended) Henry Clarke, Inverness.

Report of Judges on Agricultural Implements.

The undersigned Judges in Class 8, Implements, beg leave to submit the foregoing as those Implements entitled in their opinion to prizes. They beg to commend the collection of Implements and Dairy Utensils exhibited by Wm. Evans, Jr., Montreal, and trust that the establishment in Canada East of an Agricultural Implement Warehouse, by this gentleman, may induce the more general employment of labour saving machines. Among the articles exhibited in Section 10, in Horse Power Thrashing Machinery, credit is due for the highly finished Horse Power Thrashing Machine of Mr. Johnston, of Griffintown, Montreal. Another Thrasher upon a different principle was exhibited by Mr. Laviolette, of Napierville, which combined great simplicity of working, and economy of power. It is also to be recommended from its greater cheapness. This implement was entered too late to entitle it to compete for a prize.

CLASS X.—POULTRY AND SINGING BIRDS.

JUDGES.—T. Burn and F. Lottinville.

Sec. 1 Best trio of Asiatic poultry, Wm Faris, Sorel; second do, Chas Hughes, Three Rivers; third do, Henry Moss, Quebec; fourth do, Joseph Panneton, Three Rivers.

Sec. 2 Best trio of Spanish, Alex Ramsay, Montreal; second do, Wm Faris, Sorel.

Sec. 3 Best trio of Dorkings, John Murray, Three Rivers.

Sec. 4 Best trio of golden Polands, A P Robichon, Three Rivers.

Sec. 7 Best pair of Muscovy ducks, P M Dumoulin, Three Rivers.

Sec. 8 Best pair of ducks P M Dumoulin, Three Rivers; second do, Chas Hughes, do.

Sec. 10 Best pair of Chinese geese, Augt. Kuper, Chambly; second do, Augt Kuper, Chambly; third do, Robert Girard, Pointe du Lac; fourth do, P M Dumoulin, Three Rivers.

Turkeys.

Sec. 11 Best pair of Turkeys, P B Dumoulin, Three Rivers.

Birds.

Sec. 19 Best pair of Long Breed Canaries, Charles Hughes, Three Rivers.

Sec. 20 Best Canary Cock, do do.

Sec. 21 Best pair Green Canaries, do do.

Sec. 22 Best collection of Canaries, Joseph Robitaille, Three Rivers.

2nd do, Charles Hughes, do.

Sec. 26 Best Goldfinch, do do.

Sec. 28 Best Mule Goldfich, do do.

Sec. 38 Best Collection of Canadian, do do.

2nd do, A. P. Robichon, do

Wild Geese (highly recommended), Maxime Picotte.

Poultry (cage), A P Robichon.

Sections 5, 6, 9, 12 to 18, 23, 24, 25, 27 and 29 No Competition.

Report of Judges on Poultry, &c.

Judges on Poultry recommended a collection of Wild Geese, belonging to Mr. Maxime Picotte, and a lot of Game Fowl belonging to Mr. A. P. Robichon, of Three Rivers.

BRITISH AMERICAN LAND COMPANY'S SPECIAL PRIZES.

JUDGES.—T. Burn and F. Lottinville.

Best 12 minots of Wheat grown in Lower Canada. A. Kimpton, St. Therese.

Best 10 minots of Peas grown in Lower Canada, do, do.

Best 10 minots of Oats grown in Lower Canada, Robert Brack, Drummondville.

PART II.

CLASS V.—HORTICULTURAL PRODUCTS.

JUDGES—HON. W. SHEPPARD, W. S. HUGHES. ANTOINE MAYRAND.

Bouquets, Wreaths.

First Prize, vase bouquet, Wm Faris, Sorel; second do, J A Lambert, Becancour. First fan bouquet, W B Davidson, Montreal; second do do, Wm Faris, do.

First wreath, do, do; second do James Middleton, gardener to Wm Lunn, Esq Montreal.

First garland, Wm. Faris, do; second do, W B Davidson, do.

Do, Greenhouse plants, Mrs Widow Dickson, Three Rivers.

First four plants not grown in greenhouses, Wm Fasis, do.

Flowers.

First annuals, J Middleton; second do, Jas Keith, Beauharnois; third do, Wm Faris, Sorel.

Biennials, J G Sheppard, Montreal; second, do, W B Davidson, do.

Cockcombs, J Middleton, do; second do, J Keith, Beauharnois.

Stocks, Hon J Young, Montreal; second do, grown by his gardener, J Archbold, do.

Salpiglossis, J Keith; do, J Middleton; second do, Hon J Young.

Hollyhocks, J Middleton; second do, J Faris.

Petunias, Hon J Young; second do, J Faris.

Pansies, 12 distinct flowers, Rev. Mr Villeneuve, Montreal; second do, Hon J Young, grown by hit gardener, J Nicholson; third do, J Keith.

Pansies, (collection,) 1st do, Rev Mr Villeneuve; 2nd do. J Keith.

Aster, (30 distinct sorts), 1st do, Rev Mr Villeneuve; 2nd do, Hon J Young; 3rd do, J G Shepherd.

Aster, (collection), 1st do Rev Mr Villeneuve; 2nd do, C Campbell, of St Hilaire.

Phlox Perennial, 1st do, Wm Faris; 2nd do, Hon J Young.

Phlox Annual, 1st do, Rev Mr Villeneuve; 2nd do, J Middleton

Balsam, 1st do Rev Mr Villeneuve; 2nd do, J Middleton.

Verbenas, (variety), 1st do Hon J Young; 2nd do, J Middleton.

Verbenas, (best dozen.) 1st do, Hon J Young; 2nd do, J Middleton.

Dahlias, (18 dissimilar sorts), 1st do, Wm Faris; 2nd do, Hon J Young.

Dahlias, (12 dissimilar sorts), 1st do, Hon J Young; 2nd do, Wm Faris.

Dahlias, (6 dissimilar sorts), 1st do, Hon J Young; 2nd do, Wm Faris.

Perpetual Roses 1st do, J Middleton.

Herbaceous Plant, 1st, do, Hon J Young.

Fruits.

Plums, (collection), 1st do, Rev Mr Villeneuve; 2nd do, J Middleton.

Plums, (damson,) 1st do, Rev Mr Villeneuve.

Peaches, (under glass), 1st do, J Middleton.

Peaches, (open culture), 1st do, Hon J Young; 2nd do, Rev Mr Villeneuve.

Apples (20 varieties), 1st do, Hon J Young; 2nd do, J Middleton; 3rd do, Rev Mr Villeneuve.

Apples, (12 varieties), 1st do, J Middleton; 2nd do, Rev Mr Villeneauve.

Apples, full basket, 1st prize, J Middleton.

Pears, 1st prize, Rev Mr Villeneuve; 2nd do, Hon John Young, Montreal.

Nectarines, 1st prize, Rev Mr Villeneuve.

Grapes, (display under glass), 1st prize, J Middleton.

Grapes, open culture, 1st prize, E. Teller, Montreal; 2nd do, J Middleton

Grapes, black, under glass, 1st prize, J Middleton; 2nd do, J Douglass, Quebec

Grapes, white, under glass, 1st prize, J Middleton

Fruit Basket, 1st prize, J Middleton; 2nd do, Rev Mr Villeneuve

Melons, 1st prize, W B Davidson; 2nd do, Hon J Young; 3rd do, A Campbell, St Hilaire

Water Melons, 1st prize, Rev Mr Villeneuve; 2nd do, Chas Hughes, Three Rivers

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VEGETABLES.

Winter Cabbages, two varieties, 1st prize, H Clarke, Three Rivers

Summar Cabbages, 1st prize, J Cooper, Montreal; 2nd do, Rev Mr Villeneuve

Cauliflower, 1st prize, Hy Moss, Quebec; 2nd do, W B Davidson; 3rd do, Michael Sulivan, Quebec.

Brocoli, 1st prize, J Keith

Celery, 1st prize, H Clarke; 2nd do, W B Davidson

Beets, 1st prize, A H Frigg, Nicolet; 2nd do, J Ruid

Tomatoes, 1st prize, Rev Mr Villeneuve; 2nd do, W B Davidson

Carrots, 1st prize, Hon J Young; 2nd do, Major Campbell

Parsnips, 1st prize, W B Davidson; 2nd do, J Cooper

Onions, 1st prize, John Keith; 2nd do, J Middleton; 3rd do, J Cooper

Egg Plants, Rev. Mr. Villeneuve

Salsify, do

Squashes, Rev Mr Villeneuve, 2nd Wm Faris

Pumkins, J Keith; 2nd, Wm Faris

Vegetable Marrow, Wm B Davidson; 2nd Wm Faris

Vegetable Display, Wm B Davidson; 2nd, Rev Mr Villeneuve; 3rd, J Keith

Cottage Garden, Widow Dixon

EXTRA.

Cucumber gratuity, Prudent Pratte, St Marguerite

Sweet Indian Corn, J Thayer, Montreal

Holchin Sacharina, J G Shepherd, Montreal

Asparagus Seed do do

Samples Field Garden Seed do do

Specimens of a new vegetable, allied to Beet Root, J Keith, of Gentilly

Savoy Cabbage, gratuity, J Cooper, Montreal; do, F A Lambert, Becancour

Red Cabbage, gratuity, J Cooper, Montreal

Collection of Carnations, gratuity, L Benoit, LaBaie

Thanks to Mr Jesse Thayer for seeds of a plant from Damascus, and for seeds of Martynia Probissens.

THREE RIVERS,
Friday, Sept. 19, 1856.

In conformity with the Act 16 Vic. ch. 11, sec. 21, the Agricultural Association for Lower Canada, met this day at the Committee Room, upon the Exhibition ground, at 11 o'clock, A.M.

Present:—R. N. Watts, Esq., President of Board; E. J. DeBlois, Esq., Vice-President; Major Campbell, C.B.; P. B. Dumoulin, Esq.; B. Pomeroy, Esq.; and A. Polette, Esq., M.P.P.

There was not a representative from any Agricultural Society in Lower Canada present, though the Act above recited provides for their attendance on such occasions.

The President, Mr. Pomeroy, having taken the Chair:

The following Resolutions were unanimously adopted:—

Resolved—That the thanks of the Association are due to Major Pomeroy and to Mr. Polette, for their able and obliging assistance as President and Vice-President,

respectively, of the Association, in carrying out its duties during the past year.

Resolved—That the thanks of the Association be tendered to the Members of the Local Committee and to its active Secretary, Mr. Sévère Dumoulin.

Resolved—That the ensuing Exhibition of the Provincial Agricultural Association, shall be held at Montreal, on the ——— September, 1857.

Resolved—That A. Polette, Esq., of Three Rivers, be the President of the Provincial Agricultural Association for the ensuing year.

Resolved—That James Logan, Esq., of Montreal, and Jos. Laporte, Esq., M.PP. be the Vice-Presidents for the Association.

A Protest from J. Dods, Esq., against an Ayrshire bull, exhibited by A. Kimpton, Esq., for some alledged irregularity in the age of the bull, as being a two year old, was submitted, and decided as follows:—Inform Mr. Dods that the entry is correct: an animal being considered as a two years' old until he has accomplished his three years.

A Protest from M. Antoine Jacques, complaining that he obtained no reward for his ground sugar:—The Board cannot disturb the awards of the Judges who have made no mention of his implement in their Books.

Subsequently at 3 o'clock, P.M., the following gentlemen being present, R. N. Watts, E. J. DeBlois, Didier LaCarre, James McDonald, Esquires, and the Secretary and Treasurer, and Assistant-Secretary of the Board, the admission tickets sold during the Exhibition and delivered by the Assistant-Secretary were counted making one hundred and twenty-five pounds five shillings; the box containing the money taken for the above at the ticket office, was then opened, counted, and amounted to neo hundred and twenty-seven pounds seven shillings and two pence half-penny, which the President directed to be paid to Mr. McDougall on account of the contract of building. The 5s Tickets Members, &c., and receipts for entries, amounted to about £205. By order,

WM. EVANS, *Sec-Treas., A. A. L. C.*

THREE RIVERS, *Friday, Sept.* 19, 1856.

The Members of the Board of Agriculture, met this day at the Committee Room, on the Exhibition ground:

Present:—R. N. Watt, Esq., President of the Board; E. J. DeBlois, Esq., Vice-President; Major Campbell, C. B.; B. Pomeroy, President; and A. Polette, Esq., M.P.P., Vice-President of the Agricultural Association.

The President having taken the Chair, several subjects were discussed, but there being no particular business to transact, the Members separated, and the Exhibition was finally closed on Friday evening about 6 o'clock, P.M.

By order,

WM. EVANS, *Sec-Treas. B. A.*

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Provincial Exhibition at Three Rivers.

This exhibition was on the whole a creditable one, though many persons appear to have been disappointed in some important parts of the display. In our present number we give merely the prize list and a selection of extracts from the daily press on points especially interesting to farmers.

In the report of the *Montreal Herald*, we find the following general account:—

On Wednesday, the 17th instant, this Exhibition of stock, implements, &c., was opened on a tract of ground known as the race course, a little way out of the town of Three Rivers. The enclosure covered a space of a little more than sixteen acres, and embraced 104 stalls for horses, 145 pens for sheep and pigs, 2,200 feet of sheds for horned cattle, 110 feet for dairy produce. In the centre of the enclosure was the Industrial Exhibition building, which was 100 feet long, 12 feet high, and 30 feet wide. The estimated cost of all erections being about £400, leaving the materials in the hands of the contractor.

With regard to the show, we were sorry to see (although the entries were unusally large) that there were a great number of vacant pens, and we can only suppose that this arose from the difficulty of access, as well as the competition of the Kingston show, which, being in itself more accessible, naturally draws a large amount of fine stock, which would be deteriorated by the fatigue of attending both shows; besides, in Kingston the amount of money spent in prizes is larger, being $10,000, whereas at Three Rivers the amount was only $6,000. There are other causes assigned, such as the absence of honorary prizes or medals, the lateness of the harvest, and the time too proximate to the show at Kingston.

There are various opinions, even amongst the authorities, as to the respective merits of a permanent or a rotary Exhibition; and certainly if this year's Exhibition at Three Rivers is to be taken as a test, we are decidedly in favor of a permanent one, in a central part, such, for instance, as Montreal, believing that, although a widely extended interest is created by the rotary Exhibition, yet the real benefit to the Province at large is greater in the permanent show, from the prizes being awarded to a higher class of stock. The latter point is noticeable from the fact of small Canadian stock, tending in no way to the improvement of the country, carrying off £5 prizes, the animals themselves, in many instances, not being worth more than one-half or two-thirds the amount of the prizes.

THE SHOW.

The cattle sheds contained an excellent display of fine animals, for a new country like ours, whether we regard symmetry of shape or quality of breed, or any other excellence which a good judge demands in the class of breeding stock. The show of sheep was deserving of praise, and several admirable specimens of various breeds were easily distinguished. The swine department was the best it has been our good fortune to inspect for many years. As to the grain and garden and field produce, we think that if they did not equal in quantity, that they certainly did in quality, anything exhibited on these occasions in Lower Canada. The poultry department did not altogether satisfy our expectations. In the implement class there was a truly excellent display of articles, which showed a vast improvement in the construction of agricultural implements within late years, and which is doubtless to be attributed in great part to the rivalry excited in the public mind by similar exhibitions.

The extent of the exhibition may in some measure be judged by the number of entries, which were as follows:—

Of horses, there were—stallions, 64; other horses, 120; total, 184.

Of cattle, there were—bulls, 59; other cattle, 180; total, 239.

Of sheep, there were—pens containing from one to three sheep each, 109.

Of swine, there were—pens containing one or more in each, 86.

The entries for field and dairy produce exceeded 200.

The entries in the implement class were 250.

In the horticultural and industrial class, the entries exceeded 500.

As nearly as could be ascertained, the whole of the entries exceeded 2,000.

THE STOCK.

The show of breeding cattle was considerable, and the description fully equal to any ever exhibited in Lower Canada. This refers to the imported breeds, such as the Durhams, the Devons, and the Ayrshires; the latter, although there was a difference in size, yet appeared well proportioned. The other descriptions were also very satisfactory. There were no specimens, however, of importations of foreign cattle since the Exhibition of last year. Mr. Decker, of Roxton Falls, exhibited some very fair specimens of the Devon breed. consisting of one six year old cow, carrying off the first prize, a pair of very handsome well-matched two year old steers, a perfect gem of a bull calf, six months' old, and a yearly heifer—the two latter being highly recommended by the judges.

HORSES.

The horse department was one of the best in the show, and the description of horses is said to have been superior to any yet exhibited in Lower Canada. We noticed some very fair specimens of the Canadian and Clydesdale breeds, and also of the Cleveland Bays. It was stated that one of the best breeds had been imported for the townships, and it was said to have cost £250 currency. All the premiums were well contested. Mr. Richard, of Huntingdon, exhibited a beautiful six year old stallion, "Black Eagle," which carried off the first prize. Height, 16 hands; weight, 13 cwt,—Mr. Peter Cooke, of Drummondville, sent forward a fine light draught six years old Cleveland bay stallion, "Roseberry," which received a first prize. Height, 17 hands; weight, 14 cwt. This stallion well deserves attention from breeders.—Mr. John Alexander, of Mascouche, exhibited a heavy draught four year old stallion, bred

from a Canadian mare; it took a second prize. Mr. James Muir, of Sault au Recollets, exhibited a four year old half-bred light draught stallion, "Jack," which received a second prize.

SHEEP.

In this department, specimens of the Leicester, South Downs, Merino and Saxon were exhibited. The South Downs were considered to be the best, and the others were considered fully to meet the expectations of the visitors. We noticed, particularly, some splendid specimens of imported South Downs, from the flock of Mr. Jones Webb. The buck, Colonel Pomeroy purchased of Mr. Betts, of New York, for £50. There was also a pen of five superior Hampshire Downs, from one of the best flocks in England, which were purchased by the same gentleman. We understand that they are the first that have ever been brought to this country; and we may therefore look to great results from the importation of such a quality and breed of sheep into Canada. Amongst the Leicesters we noticed the first prize ram—the property of Mr. James Sommerville, of Lachine—as being very superior; also, a pen of two superior bucks, belonging to Mr. Miller of Pickering.

SWINE.

The specimens which were exhibited under this head were certainly of a very fine description. There was one monster, which attracted considerable atttention, well worthy the name of a porker, weighing something over 900 lbs. It is said to be fifteen months old. The Berkshire breed is in the greatest repute throughout the country. We remarked a smaller breed, which is worthy of special mention.

POULTRY.

In this department the specimens exhibited were but middling, and we could not but regret that they were of Foreign, instead of native breed. We should like to have seen more of the beautiful white, black, and hardy hens of Lower Canada. There were a couple of Chinese geese exhibited by A. Kuper, of Chambly, which we greatly admired. We were informed that some of these geese weigh 20 lbs.

DAIRY PRODUCE.

The samples exhibited, though small, were of a good quality, and much better than what has been exhibited on former occasions; which is to be attributed to the numerous improvements in churning and other dairy utensils.

SUGAR FROM MAPLE OR BEET.

In this class we observed one superior sample of cake; and another, though of inferior appearance, was a superior article, as regards the grain. There was a third specimen manufactured into Muscovado or grain, and in appearance equal to Mr. Redpath's refined crystallised sugar.

FIELD PRODUCTIONS.

In this class, several samples of oats of the British American Land Company were exhibited, the quality of which, though good, appeared to disadvantage from not being clean. Other specimens were remarkable for being clear, bright, and of a heavy quality. Mr. Brack, of the Eastern townships, exhibited some excellent samples of spring wheat. Amongst the samples of mangold wurtzel were several inferior ones; but we noticed two in particular, the globe and the long red, which were very superior. The samples of turnips were chiefly good, one sample being very large in size, though spongy, and unhealthy in appearance. There were two specimens of yellow Aberdeens which attracted much attention. The samples of potatoes were very numerous and good; but there were two samples in baskets which were really of a superior quality, as they showed their mealy appearance at a glance. The samples of Indian corn were very numerous, and superior to anything of the kind we expected to have seen in L. C.; but we regret that there was an absence of sweet corn. The samples of white beans grown in Drummondville by Mr. Thomas Badham were numerous and excellent in quality. The horsebean was rather inferior in quality and not numerous. The specimens of rye were very inferior, but those of peas of a very superior quality. There was a specimen of Kohl Rabi exhibited which we much admired. The samples of barley and Timothy seed were numerous and good. The samples of clover were not numerous, but those exhibited were fair. There were but two samples of flax, and it is a pity they were not much more numerous, as we feel confident that the soil of Canada is well adapted for the cultivation of flax.

The Reporter for the *Gazette* gives the folfowing accunt of the *Live Stock*.

CLASS I—CATTLE.

In cattle, the display was very fine, and I doubt if better descriptions of imported cattle can be found on the continent.—In Durham Bulls, there was a good competition. The first prize Bull was exhibited by Cyrus Boily, of Eaton (Compton). He was a very fine looking animal, six years of age, and was one of the largest on the ground. The second prize was awarded to Col. S. Baker and son, of Dunham (Missisquoi). He is only three years old, and is very promising. He is well built, and is only inferior to the first prize bull in age and height. He will be a very handsome animal as soon as he has attained his full growth. Mr. D. Westover, also of Dunham (Missisquoi), took the third prize in this class. His bull was a very fine animal, and was not inferior to the others in anything except size, and that very little. The fourth prize was awarded to Mr. Irvine Somerville, of Champlain. The judges in this class had a very difficult task to perform, the difference between the four successful animals being so small. The decision was satisfactory to all parties.

In the third section (1 year old Durham bulls) there was only one prize awarded. Mr. G. C. Robinson, of Shefford, won it. The bull was very large for his age, well-formed, and promises to be a very handsome animal. In Durham cows there was little competition. Mr. Westover, of Dunham, had two very fine cows; Mr. Dunkan, of Leeds, took the first prize. The one year old Devon heifers were poor. The display of Hereford cattle was small. The best bull won the B. A. Land Co.'s prize last year, and the Baron de Longueuil's this year. In Devons there was the best show. The first prize bull belongs to Mr. E. Longley, Shefford. He was imported this year from Connecticut, which entitles him to a double prize; it being one of the rules of the Society, that every animal imported within six months of the annual exhibition shall receive a double premium. He cost his present owner $225. He is a very superior animal and has a coat like a horse. He was in my opinion, the best bull on the ground. In Devon cows there were but two premiums awarded. The first was a fine animal, but had more the appearance of a cross between the Devon and Durham, or else the native cattle. She had the color, but not the form of a true Devon. The 2nd was a good, well-bred cow. Mr. Turgeon, of Terrebonne, had a very fine bull of immense size,—the largest on the ground—which was evidently of Devon grade. From some cause, which I could not ascertain, no prize was awarded him. In two year old Devon heifers, Mr. A. Kimpton, of St. Therese, took the first, and Mr. L. W. Decker, of Roxton Falls, the second. Some of these had not the appearance of being pure bred. The Ayrshires were very fine, and very numerous. Among the two year old Bulls, the Hochelaga Agricultural Society exhibited two fine animals, lately imported, one of which was remarkably well made. The second prize was awarded the latter; but it was though the would receive the first, as the one receiving the first prize was said to be older than represented. In one year old bulls, the Hochelaga Agricultural Society was alone. In Ayrshire cows, Mr. James Logan, of Montreal, as usual, headed the list. The qualities of his cattle are too well known to require any notice from me. In heifers, Mr. Logan is again A No 1. In grade cattle there was a very large and spirited competition. There was a good deal of dissatisfaction regarding the decisions here. The first prize was a very handsome, well-formed animal, and looked like a high grade between the Ayrshire and Durham. The second prize cow is far inferior to the first, and even to others lower down on the list. Col. Baker and son also took prizes here. In two year old heifers there was a good competition—most all high grades with the Durham. There were eight prizes in this class. I observed a two year old heifer, a very high grade between a Durham and an Ayrshire, which, for some reason, received no prize. The Canadian class was really disgraceful. The Judges have much to answer for, in awarding premiums to such miserable, contemptible animals as were exhibited under this head. This is worse than throwing away our money, and counteracts the original objects of these exhibitions and prizes. Those exhibited were hardly fit for dog's meat, and a prize of £5 was awarded to an animal not worth two. What is the result? These men return home impressed with the idea that they possess something valuable. Their neighbours are desirous of propagating a breed which has met with such honor, and thus the intention of Agricultural Societies is foiled, and men go on breeding the same miserable class of animals, instead of improving them. This should not be and our Agricultural Societies ought to take measures to prevent it.

In fat cattle, there was but one ox exhibited, which was a high grade from a Hereford. He weighs about 1,400 or 1,500lbs. There was a number of cows. The second prize cow was much larger and finer than the first, but was older. She would weigh when dressed, about 900lbs, and is a grade between the Durham and the Ayrshire. In steers the prize animals were very well formed, and in capital condition. There were no working oxen exhibited. In extra stock, highly recommended by the Judges, were a yearling heifer and a calf, very high bred Devons, and a four year old fine Durham cow. This last took the first prize at Sherbrooke last year,

and was consequeutly disqualified for competition this yoar. She was imported from the State of New York, and is from Col Morris's highly prized herd. She was imported when one year old, with a ten months bull calf, and cost $400. The bull calf on exhibition is eight months old, and is of an extraordinary size. He attracted the attention of a large number of breeders. His Excellency Sir Edmund Head noticed the cow at the Sherbrooke Exhibition last year, and remarked that she was the best bred animal on the ground. These belong to Col. Baker and son.

I would here remark that there is one of the regulations of the Society, the dispensation of which, I think, would be attended with no unsatisfactory result. It is a rule that any article taking a first prize at any annual exhibition cannot compete at a second exhibition. The reasons why this rule should be dispensed with are, that parties, after they have taken a prize, and knowing that they they cannot take another, accept the first advantageous offer, and thus perhaps the best stock is exported from the country; whereas if these animals were allowed to compete, farmers would know what they had to encounter, and would endeavor as much as possible to improve their stock. It would, in my opinion, be better to form anothor section for cattle that had already taken premiums, and thus agriculturists would be able to judge of the merits of the prize animals of each year, as contrasted with each other.

CLASS II.—SHEEP.

The prize Leicesters were remarkably fine sheep, the property of James Sommerville, of Lachine. Such sheep as these are not only creditable but profitable to the proprietor. Agriculturists would consider their own interests by breeding such sheep as these, instead of the miserable animals that are to be seen on many farms. William Millar, from the township of Pickering (York, C.W.), exhibited some very fat sheep—the largest on the ground; but I understand that the judges had some doubts about the pureness of the breed, and therefore no prize was awarded them. They were also thought too fat, but are worth from $100 to $200 each. In South-Downs, Mr. B. Pomeroy, of Compton, was the most successful competitor. These sheep are in very fine order and were imported from England about six weeks ago, by Mr. Betts, from whom their present proprietor purchased them, and received a double prize. There were not many Merinoes and Saxon, but those that were exhibuted were very good; Mr. J. D. Parker, of Hatley, took mostly all the prizes. In fat sheep, Thomas Dunkan, of Leeds, was the only successful competitor.

CLASS III.—SWINE.

The display in this Class was very fine indeed. Mr. John Scott, of Montreal, had the best aged boar of large size on the ground. The second prize boar was an immense animal, weighing between 800 and 900lbs, and belonged to Jean M. Allard of St. Henry Mascouche. The Hochelaga Agricultural Society had the best young boar on the ground. There was a very fine Nottinghamshire pig, 13 months old, imported last fall, as well as a great number of well-bred Essex and other imported breeds on the ground, which do great credit to their owners.

CLASS IV.—HORSES.

Heavy Draught.—The first prize was awarded to Charles Richards, of Huntingdon, and the second to John Alexander, of Mascouche. There was a great deal of speculation as to which of these horses should receive the first prize. They were both black. The first prize horse was six years old, about 15¾ hands high, well and powerfully built, and a very handsome animal. He was sired by Mr. Dodd's old "Clyde," with a dam of the "Morgan" breed. The second prize horse was much larger than the first, being nearly 17 hands high, and only four years old. He is not as well formed as the other, as regards his legs, but he is two years younger. He was also sired by old "Clyde," with a Canadian dam. There were several horses in this class, all very well built, and very fine looking animals.

Light Draught.—The first prize was awarded to Mr. Peter Cooke, of Drummondville. He is a Cleveland bay, and was imported last fall. He is six years old, and is said to be the best horse in Canada. The second prize horse belongs to James Muir, Sault au Recollet. He is a descendant from old "Clyde" by a Canadian mare, and is a very handsome animal. The horses in this class were particularly fine, and deserved prizes.

Canadian.—The handsomest horse on the ground won the first prize. He belongs to Edward Caron, Riviere du Loup. He is valued at $600. He has a very heavy mane and tail, and is very showy in action. He is a perfect picture. The second was a beautiful black. The third was a handsome dappled grey, from Lachine,

Stallion of any Breed, 3 years old—This is the only section in which there was any murmur. The horse to which the first prize was awarded was sired by Cœur de Lion, and was a fine animal; but the second prize was awarded to a horse evidently the best in his class, both in appearance and form, but his predecessors were not so illustrious. There were also some very handsome 2 year old stallions, in which Mr. John McGlynn, Montreal, was No. 1.

The mares were very ordinary. No carriage horses were entered. In blood horses there was one entry, but his pedigree not being satisfactorily proved, he was withdrawn, and entered as a saddle horse, in which section he took the first prize. He belongs to Mr. Douglas Moore, of St. Armand. Mr. Somerville, of Lachine, took the second prize, for a very fine animal.

From the *Transcript* we borrow a notice of the departments of Horticulture *and Farm implements.*

The Horticultural Department was a very fair show; and the competitors most numerous. Mr. Archbold, gardener to the Hon. J. Young, took the first prize for the best display of apples; Mr. Middleton, gardener to Wm. Lunn, Esq., the second; and Mr. Nicholson, gardener to the Rev. M. Villeneuve, the third prize. For the best 15 varieties of flowers, Mr. Nicholson took the first prize, and Mr. Middleton for the 12 do. In pears, Mr. Nicholson showed 25 varieties, and took the first prize, while Mr. Archbold showed 18, and took the second. In Dahlias for the best 18, Mr. Faris of Sorel took the 1st prize, and Mr. Archbold the second; Mr. Archbold took the first prize for the best 12, and Mr. Farris the 2nd. The same was the case with the best 6. Mr. Middleton took the 1st prize for the best collection of Salpiglosis, and Mr. Archbold the 2nd. For Phloxes, Mr. Faris of Sorel took the 1st prize, and Mr. Archbold the 2nd. In Stocks, Mr. Archbold showed 27 varieties and took the 1st prize; Mr. Keith of Beauharnois, had 18, and took the 2nd.—The show of Balsams, Herbaceous plants, Petunias, Verbenas, Astors, Grapes, Peaches, and Seeds, was very good, and the names we have given above, may be taken as a fair indication of those who carried off prizes.—So with vegetables; where the District of Montreal was particularly represented, and competitors from all quarters of it contended for the honors.

Of Agricultural Implements the show was very fair. Mr. Patterson, of Montreal, exhibited some improved specimens of ploughs and harrows, which were greatly admired. The collection of Dairy Implements, showed by Mr. Wm. Evans, Jr., was a first-rate one, though being all imported from the United States, they did not attract half the attention they would have otherwise had bestowed on them. Mr. Benton, of Stanstead, showed a Cheese Tub, by the use of which the labor and drudgery of making Cheese is avoided, strength is saved, and the process rendered easy and pleasant. Mr. Robertson, of Long Point, showed a Grain Machine Roller; and Mr. Jeffrey, of Montreal, a large collection of implements. Mr. Hagar, of Montreal, had also several improved Agricultural Machines on view.

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PROVINCIAL AGRICULTURAL ASSOCIATION.—We learn that A. Polette, Esq., M.P.P., has been elected President of the Association for the next year, and James Logan, Esq., 1st Vice-President, and Jos. Laporte, Esq., M.P.P., 2nd Vice-President. The next Exhibition will be held in this city. It is matter of serious complaint that the attendance of delegates from the County Societies is so small at the election of these officers and the transaction of the business of the Association. The business of the Society is left almost altogether in the hands of the Board, and then, if anything goes wrong, we hear our country farmers grumbling about it. If they would take sufficient interest in the matter to see that the Presidents of their Country Societies attended the meetings of the Association, they might rectify any evils of which they think they have cause to complain. If they are apathetic, and do not care for their own interests, how can they expect they will be properly looked after. The Members of the Board work hard, and do a great deal; but it is unfair to leave them without the information and the active support which they should receive from the representatives of the several County Associations. Farmers cannot expect to have their affairs prosper, unless they take some trouble to look after them.—*Gazette.*

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THE CATTLE SHOW, MONTREAL.—The City of Montreal and County of Hochelaga Cattle Show was held yesterday afternoon in the large field at the head of St. Urbain Street. The exhibition was a very fair one; but better in quality than quantity. In the display of horned cattle

there appears to be a marked improvement from year to year. This, we suppose, is chiefly owing to the importation of new blood from the old country—a matter to which the directors of the society have given special attention The pigs seemed to be marked beyond anything of the kind we ever saw before. There has been nothing to compare with them at any former show. The horses and cows made but a poor appearance. The fact is, the former are purcha ed by the Americans as fast as they are ready for sale, and carried out of the country. And the deficiency in numbers of the latter was probably owing to the division of the county into two agricultural districts under the new act.—The butter and cheese were excellent. The exhibition of rams and sheep was fair.

The Society, under the presidency of John Dods, Esq., and the able management of the Secretary-Treasurer, James Smith, Esq., has flourished exceedingly. The combined efforts of these gentlemen and the Committee have effected a marked improvement in the quality of the county stock. This is evidenced by the fact that while formerly four or five dollars could only be got for a calf, now, where these animals are intended to be reared, their average price is from thirty to forty dollars. So with pigs—Hitherto the price of a young pig was only $1 to $1½; now the Secretary informs us that $10 a couple can be obtained for them in the American market.

This state of things is very gratifying; but it is much to be regretted that the division to which we have referred has taken place. We should like to see the county of Montreal, in an agricultural point of view, just like what Belgium is to Holland. The former supplies the latter with all the best and most serviceable breeds of cattle; and Montreal united could supply this continent.

The latest project which the Society has afloat is the importation of a thorough-bred Irish hunting horse, which, crossed with our Canadian mares, will give us a breed having all the bone and muscle required. The Secretary has now £240 of private subscriptions to be devoted to this object, and it is determined to invest £500 in the purchase of the animal.

The Society dined together in the afternoon at Mrs. Irving's hotel, opposite the market, and had a merry time of it. The table was liberally furnished, and the wines and other liquors were excellent. The usual amount of speechifying and congratulations were exchanged; and all who know how happy Mr. Dods is in the Chair, will be satisfied that he made all who were with him happy also.—*Herald.*

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List of Prizes.

General Class.

Best Draught Stallion, 1st prize, James Muir, £3; 2nd do, J Bte Brousseau, £2 10s. No further competition.

For the Stallion best adapted to propagate Carriage Horses, 1st do, James Hughes, £2 10s. No further competition.

Best Saddle Stallion—no competition.

Brood Mares, 1st do, James Drummond, £2 10s; 2nd do, Paschal Gagnon, £2; 3d do, Jas Allan, £1 10s.

Two Years Horse Colt, 1st do, John McGlyn, £1 10s; 2nd do, Ibriah Cleavy, £1.

Two Years Fillies or Geldings. 1st do, James Allan, £2; 2nd do, James Buchanan, £1 10s; 3d do, Hugh Campbell, £1.

Aged Bulls, 1st do, Peter Fisher, £2; 2nd do, Archd Ogilvie, £1 10s; 3rd do, Daniel Hadly, £1.

Two Years Old Bulls—no competition.

One Year do. 1st do, John Drummond, £1; 2nd do, Peter Fisher, 15s; 3d do, Hugh Allan, 10s.

Aged Rams, 1st do, James Muir, £1 10s; 2nd do, Joseph Desrochers, £1 5s; 3rd do, Michael Durand, £1.

Rams, [One Shear], 1st do Edward Quin, £1; 2nd do Edward Clendinnen, 15s.

Aged Boars, 1st do, John Scott, £1 5s; 2nd do, James Hughes, £1; 3rd do, Leon Laporte, 15s.

Boars under six Months, 1st do, Leon Laporte, £1 5s; 2nd do, Casimir Tenant, £1; 3rd do; Jas. Logan, 15s.

Canadian Cloth Made in a Family, 1st do, Xavier Charritier, £1 5s; 2nd do, Andre Langlois, £1; 3rd do, Casimir Tenant, 15s.

Flannel, 1st do, Xavier Charriter, £1 5s; 2nd do, Joseph Desroches, £1; 3rd do, Joseph Charritier, 15s.

Linen, 1st do, Joseph Desroches, £1; 2nd do, Joseph Charritier, 15s.

English Class.

Cows, 1st do, John McGlyn, £2; 2nd do, Jas Logan, £1 10s; 3rd do, John Somerville, £1.

Two Years Old Heifers, 1st do, John Dods, £1 10s; 2nd do, Geo. D. Watson, £1 5s; 3rd do, Chas. Holdsworth, £1.

One Year Old do. 1st do, John Dods, £1 5s; 2nd do, James Logan, £1; 3rd do, William Smith, 15s.

Aged Ewes, (Pens of Two) 1st do, Edward Quinn, £1 5s; 2nd do, James Muir, £1. No further competetion.

Ewes, (One Sheer) 1st do, Edward Quinn, £1; 2nd do, Edward Clendinnen, 15s.

Sows, (with a Litter of Pigs or with Young) 1st do, James Logan, £1 10s; 2nd do, James Buchanan, £1 5s; 3rd do, James Hughes, £1.

Pigs, (Best Pair Under Six Months) 1st do, Jas Buchanan, £1; 2nd do, James Logan, 15s; 3rd do, James Muir, 10s.

Cheese, (215 lbs each) 1st do, Robert Brodie, £1 10s; 2nd do, Daniel Drummond, £1 5s; 3rd do, James Drummond, £1.

Butter, (28 lb Tinnets) 1st do, Daniel Drummond, £1 15s; 2nd, do, John Somerville, £1 10s; 3rd do, John Dods, £1 5s; 4th do, James Drummond, £1.

Fresh Butter, (3 lbs, in Quarters, as prepared for Market) 1st do, James Drummond, £1; 2nd do. Edward Clendinnen, 15s; 3rd do, Francis Hadley, 10s.

French Canadian Class.

Cows, 1st prize, Eustache Prudhomme, £2; 2nd do, Paschal Gagnon, £1 10s; 3d do, Francois Brault, £1.

Two Years Old Heifers, 1st do, Paschal Gagnon, £1 10s; 2d do, Joseph Laporte, £1 5s; 3d do, Francois Charretier, £1.

One Year Old do, 1st do, Eustache Prudhomme, £1 5s; 2d do. Andre Langlois, £1; 3d do, Joseph Laporte, 15s.

Aged Ewes, 1st do, Andre Langlois, £1 5s; No further competition.

Ewes (One Shear), 1st do, Leon Laporte, £1; 2d do, Louis Langlois, 15s.

Sows, (with a Litter or with Young), 1st do, Leon Laporte, £1 10s; 2d do, Francois Beaudry, £1 5s; 3d do, Joseph Laporte, £1.

Pigs under Six Months, (Best Pair), 1st do, Leon Laporte, £1; 2d do, Joseph Lanouette, 15s; 3d do, Louis Langlois, 10s.

Cheese—no competition.

Butter, (28 lb Tinnets), 1st do, Joseph Laporte, £1 15s; 2d do, Francois Beaudry, £1 10s; 3d do, Leon Laporte, £1 5s; 4th do, Joseph Desroches, £1.

Fresh Butter, (3 lbs, in Quarters, as prepared for Market), 1st do, Leon Laporte, £1; 2d do Joseph Laporte, 15s; 3d do, Francois Charretier, 10s.

English Class.

Potatoes, 1st prize, John Drummond, £2; 2d do, Archd Ogilvie, £1 15s; 3d do, John Sommerville, £1 10s; 4th do, Peter Fisher, £1 5s.

Carrots, 1st do, James Logan, £1 15s; 2nd do, Francis Hadley, £1 10s; 3rd do, Daniel Drummond, £1 5s; 4th do, Thomas Peel, £1.

Mangol Wurtzel, 1st do, James Allan, £1 15s; 2nd do, James Logan, £1 10s; 3rd do, Joseph Laporte, £1 5s; 4th do, Daniel Drummond, £1.

Turnips, 1st do, James Logan, £1 10s; 2nd do, John Sommerville, £1 5s; 3rd do, John Drummond, £1.

Indian Corn, 1st do, Andre Langlois, £1 10s; 2nd do, James Logan, £1 5s; 3rd do, Wm Watt, £1; 4th do, Robert Brodie, 15s.

Horse Beans, 1st do, Walter Benny, £1 5s; 2nd do, John Clark, £1.

Summer Fallow, 1st do, Edward Quinn, £1 10s. No further competition.

French Class.

Potatoes, 1st prize, M F Ossaye, £2; 2nd do Maurice Gougeon, £1 15s; 3rd do, Felix Prudhomme, £1 10s; 4th do, Joseph Lanouette, £1 5s.

Carrots, 1st do, Joseph Laporte, £1 15s; 2nd do, Leon Laporte, £1 10s; 3rd do, Louis Langlois, £1 5s; 4th do, Joseph Lanouette, £1.

Turnips—no competition.

Indian Corn, 1st do, Leon Laporte, £1 10s; 2nd do, Francois Brault, £1 5s; 3rd do, Eustache Prudhomme, £1; 4th do, Louis Gervais, 15.

Horse Beans, 1st do, Leon Laporte, £1 5s. (Very superior, excelling any in English Class.) No further competition.

Summer Fallow—no competition.

Mangol Wurtzel, 1st do, Andre Langlois, £1 15s; 2nd do, Leon Laporte, £1 10s; 3rd do, Medard Laporte, £1 5s; 4th do, Joseph Lanouette, £1.

General Competition.

For the best Surface Drained Farms, 1st prize, James Allan, £1 10s; 2nd do, Hugh Campbell, £1.

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County of Laval Agricultural Exhibition.

The County of Lavel Agricultural Society held its annual exhibition since its separation from Terrebonne (under the new Act of Parliament,) at St. Martin, Isle Jesus, on Thursday week, and for number of animals and

superiority in breed was never equalled in the neighborhood. The storm of the previous night and the excessive rain in the morning prevented many from bringing cattle; but, notwithstanding the heavy rain, the weather cleared up and the day was very fine.

After the show a large party sat down to dinner at Mr. Bourrassa's hotel.

The following is the list of prizes awarded:—

Well Managed Farms.

1st prize, F Lavoie; 2, Louis Lehaise; 3, C Therrier; 4, L Lavoie; 5, Leon Belair; 6, M Ouimet; 7, J B Filiatrault.

Wheat.

1, L Belair; 2, C Therrier; 3, T Valincourt; 4, Joseph Gravelle; 5, W Woodwark; 6, B Cloutier; 7, Joseph Despatis.

Barley.

1, C Therrier; 2, J Young; 3, H Charbonneau; 4, M Ouimet; 5, R Marshall; 6, J B Delorier; 7, Fs Valincourt.

Oats.

1, B Goyer; 2, N Gravel; 3, J Chartrand; 4, T Major; 5, R Goldie; 6, Ant Goyer; 7, B Belisle.

Peas.

1, H Tourville; 2, J Young; 3, T Nadon; 4, J Charbonneau; 5, Col Webster; 6, Hon C S DeBleury; 7, L Bellefleur.

Flax.

1. N Ouimet; 2, J Desrochers; 3, P A Desjardins; 4, G Legris; 5, S Filiatrault; 6 Ant Masson; 7, G Gravel.

Indian Corn.

1, J Prevost, N. P., 2, J Desjardins; 3, Michel Ouimet; 4, James Parks; 5, J B Desermeau.

Potatoes.

1, F Lavoie; 2, A Hortie; 3, J Park; 4, T McQuillon; 5, P Hortie; 6, F Kimpton; 7, P Gravel.

New Meadow.

1, L Lehaise; 2, L Lenoir; 3, Hon C S DeBleury; 4, C Therrier; 5, C Joli; 6, G Legris; 7, F Kimpton.

Carrots.

1. G Legris.

Mangold Wurtzell.

1, A Hortie; 2, Col Webster; 3, G Legris, 4, M Ouimet; 5, M Constant; 6, P Ouimet; 7, G Gravel.

HORSES.

Aged Studs.

1, Guillaume Blondeau; 2, O Belair; 3, J Gratton.

Studs under 3.

1, M Millan; 2, N Chartrand; 3. M Ouimet; 4, M Labelle.

Colts. under 4.

1, Mag Hotte; 2, O Charbonneau; 3, F Kimpton; 4, C. Joli.

Mares and Foals.

1, L Lenoir; 2, B Lachapelle; 3, Charbonneau; 4, Major Filiatrault; 5, P Gravel; 6, N Lenoir; 7, S Stephens; 8, F Chanon.

Mare Colts under 4.

1, J Gagner; 2, Major Filiatrault; 3, T McQuillan; 4, T Wilomy; 5, N Roger.

HORNED CATTLE.

Bulls, Aged.

1, C Therrier; 2, M Labelle 3, Vennor; 4, ———; 5, M Contant; 6, T Nader; 7, J Gagnon; 8, J B Delorier, fils.

Bulls under 3.

1, J Hortie; 2, D Labelle; 3, P Stephens; 4, E Ethin; 6, Martin Labelle; 7, S Legris; 8, J B Dagenais.

Bulls under 2.

1, F Gravelle; 2, N Gravelle; 3, J B Dagenais; 4, D Labelle; 5, Rev. M Dubé; 6, T Major; 7, L M Seers; 8, J B Delorier, fils.;

Cows.

1, F Hotte; 2, L Nader; 3, B Hortie; 4, N Gravelle; 5, T Major; 6, E Ouimet; 7, S Stephens; 8, J B Delorier, pere.

Heifers under 3.

1, P Hortie; 2, F Kimpton; 3, H Fraser; 4, A Bergeron; 5, O Belair; 6, A Roger; 7, S Stephens; 8, F Heron.

Heifers under 2.

1, A Bergeron; 2, M Ouimet; 3, N Gravel; 4, S Ouimet; 5, J Vesina; 6, S Legris; 7, A Hortie; 8, H Fraser.

SHEEP.

Aged Rams.

1, F Kimpton; 2, J Lavoie; 3, S Ouimet; 4, M Labelle; 5, O Pacquet; 6, E Fillion; 7, L M Leers.

Young Rams.

1, F Kimpton; 2, C Therrier; 3, F Valincourt; 4, E Filion; 5, A Hortie; 6, M Ouimet; 7, T Nader; 8, S Young.

Aged Ewes.

1, C Therrier; 2, T Hotte; 3, A Major; 4, J Young; 5, N Gravelle; 6, Aj. Major; 7, G Blondon; 8, J Gravel.

Young Ewes.

1, C Therrier; 2, F K Kimpton; 3, P A Desjardins; 4, S Lavoie; 5, T Hotte; 6, L M Seers; 7, O Pacquet; 8, A Major.

SWINE.

Old Boars.

1, N Hortie; 2, O. Larouche; 3 L Lehaise; 4, T. Lavoie; 5, J Gravel.

Young Boars.

1, James Parke; 2, J Young; 3, R Goldie; 4, T Hotte; 5, N Gravel

Sows.

1, L Lehaise; 2, J B Dagenais; 3, O Pacquet; 4, S Lavoie; 5, J Young; 6, F Kimpton; 7, L Bellefleur; 8, C Therrier.

Butter.

1, T Major; 2, T Gravelle; 3, J Young; 4, Rev M Dubé; 5, N Lapierre; 6, R Goldie; 7, J Park; 8, S Legris.

Cheese.

1, T Hotte; 2, J Park; 3, B Cloutier.

Etoffe.

1, N Lapierre; 2, S Legris; 4, F Charbonneau; 5, P Ouimet; 6, F Chanon; 7, P Hortie.

Linen.

1, B Cloutier; 2 J Charbonneau.

Flannel.

1, M Ouimet; 2, S Legris; 3, P Hortie; 4, J Gravel.

Manufactured Etoffe.

1, Major Filiatrault; 2, E Ouimet.

Sugar.

1, N Gravel; 2, J Desjardins; 3, C Joli; 4, T Major.

———:o:———

Root Crops--Turnips.

The weather in the past and present months has been most favourable to the growth of these roots, and we trust that those farmers who have sowed a great breadth of them, and have succeded in preserving them through the dry weather of early summer, will have no cause to regret their attention to this branch of husbandry.

The pulling of turnips is a very simple process, but it should be methodically done—the puller taking two drills and regularly piling his turnips in convenient heaps as he proceeds. It is the usual practice to leave the heaps for a few days before storing. In the interval they should be lightly covered up with their own tops. When the turnips are carted off, the tops may be scattered about, and if the ground is sufficiently firm, cattle or sheep may be let in to feed on them. The remains of the tops being of a very rich nature, will form an excellent manure for the succeeding wheat crop, and it is a good practice to plough them in, in autumn, taking care that the ground, if not underdrained, is well water furrowed to prevent stagnation of moisture in winter and spring.

The root house should always be near the stables if possible, but not in such a position that the gases from the turnips fill the stables, as these gases are unwholesome both to animals and human beings; and for this reason turnips should not, if it can be avoided, be kept in the cellars of houses. Various kinds of constructions are employed for root houses; but the essential conditions are 1st. a sufficient thickness of straw, tan, boughs, wood or earth, to keep out frost. 2. Dryness, both as to water from above and the floor on which the turnips lie. 3. A flue or chimney for the escape of the air and gases from the turnips. This may be closed with a little straw in extreme frost, but it is safe so long as warm steam can be felt to escape from it. The following short directions, from Judge Peter's, are as practical and useful as anything that can be said on these subjects:—

"*Pulling.*—Few directions need be given about this part of the business. The tops and tails should be cut off close to the turnips, or they will not keep so well. Some persons advise the tops to be hauled off and fed to the cattle on other fields. I have tried this, and am convinced it is a very bad practice. In the first place, as food, they are scarcely worth the labour of hauling off; they will keep cattle alive, but if they happen to be fat, they will reduce their condition; and if the milch cows get them, the butter will be unfit for market. But the great objection to removing them is, that it robs the land of what ought to be left to feed the succeeding wheat crop. A heavy crop of turnips is exhausting. In Britain, a portion of the turnips is consumed on the land, by sheep. Our climate will not permit this; therefore, as we have to remove the turnips, we should at least leave the tops.

If you wish to feed them, and there is time to do so before ploughing, let them be eaten where they grew; or if not plough them in, and, decaying in the soil, they will enrich the land; whereas removing them is not only a waste of labour, but your wheat crop will reproach you for having done so.

"*Storing.*—Some complain of turnips being difficult to keep; those who find them so, keep them too close: with proper management; there is no difficulty in keeping any quantity. Tkey should be put in piles in the field when first pulled, and covered with tops or straw, and a little earth. Here they will sweat a little. A dry day should be chosen to cart them to the root-house. My root-house is dug four feet deep, and then roof pitched from the earth, and covered with seaweed and earth, well sodded over; the floor formed of slabs and longers, raised six inches from the bottom, and divided into three divisions. It will contain about two thousand five hundred bushels of roots, and I generally fill it full, and have never lost any turnips. In the top there is a chimney, which is never shut night or day during the winter; the vacancy below, and the partitions, allow all the confined air to ascend, and as it is constantly escaping through the chimney, no frost comes down. Any one who will ventilate his root house in this way, will find the turnips as sound in June as when first put in. The situation of the root-house is a matter of importance: it should be attached to the barn, and entered from the barn; this will seve a deal of labour in carrying them to the cattle during winter. Some store them in their cellars, which is the worst place that can be selected, as they are generally too hot and close to preserve the turnips, too far from the barn for convenience, and the gas which escapes from them renders the air of the house unwholesome."

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THE FARMER'S SONG.

(Written for the Irish Farmer's Gazette.)

BY JACOB THOMPSON DUNNE.

Let lords and dukes in grandeur shine,
And revel in each luxury;
The fields and crops and herds be mine,
And Nature's sweet simplicity.

Give me the farmer's quiet home,
Beneath the broadspread beechen tree;
Where warblers chime in dulcet tone,
And lucid rills roll prattlingly.

Let warriors seek for fame afar,
And glitter in their bright array:
The spade and plough be all my care—
My vow each weed and pest to slay.

I envy not the citizen,
That struts the close, unhealthy town;
More dear's to me the daisy glen,
My lowing herds at eve come down.

What though the sun our cheek has tann'd
And toil our hands made stiff and hard;
Still we'er the nobles of the land,
And peace and plenty our reward.

See patriotic truth so rare,
So hard in this false world to find,
Points to the farmer's homestead fair;
And cries, there my true friends are shrin'd.

Then here's to him that tills the land,
The honest hearted, true, and brave;
How still without him art would stand,
And trade and commerce flee the wave;

'Tis he upholds his country's weal,
By toil that damps his manly brow;
Hail to the farmer, then, all hail,
And may God speed the mighty plough.

Gullenagh, near Maryborough.

———:o:———

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

30th Sept., 1856.

Hay from 10 to $12 per 100 bundles.
Straw from 3 to $5. do.
Fresh Butter, per lb. from 1s 3d to 1s 6d.
Salt Butter, do from 10½d to 11d.
Country Cheese, from 6d to 8d.
Wheat, little offering.
Barley, 2s 6d to 3s.
Rye, none.
Oats, from 1s 8d to 1s 10½d.
Yellow Indian Corn, from 3s 9d to 4s.
Indian Corn, (Ohio) 2s 9d to 3s.
Buckwheat, from 2s 9d to 3s.
Peas, from 3s 3d to 4s.
Beef, per 100 lbs, from $5 to 8.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 7d.
Veal, 6d to 7½d.
Eggs, 10d to 11d.
Honey, per lb. 7½d to 8d.

WANTED—AGENTS

TO SELL STEEL PLATE ENGRAVINGS, including the beautifully illustrated Engraving of the "Lord's Prayer and Ten Commandments." An active person with a small capital can mak $50 to $75 per month. For particulars, address

D. H. MULFORD,
No. 167, Broadway, New York.

4 ins. pd.

AGRICULTURAL SOCIETY No. 2,

OF THE

COUNTY OF LEINSTER.

THE PUBLIC EXHIBITION will be held at the Village of the Township of RAWDON, on TUESDAY, the 14th OCTOBER next, to commence at TEN o'clock, A.M.

By Order,
J. HORAN, Sec.-Treas.
A. S. No. 2, C. L.

Rawdon, 28th August, 1856. 2 ins.

NOTICE.

THE County of MEGANTIC AGRICULTURAL SOCIETY, No. 2, will hold its ANNUAL EXHIBITION and CATTLE SHOW, on the Farm of THOMAS DROUNEY, Esq., on TUESDAY, the 14th day of OCTOBER next, at TEN o'clock, A. M.

For further particulars, see Prize List.

By order,
P. CAMPBELL,
Sec.-Treas.

Inverness, 9th Sept., 1856. 1 ins.

THE CATTLE SHOW

OF THE

Agricultural Society No. 1,

FOR THE

COUNTY OF GASPE,

WILL take place at ANSE A BEAUFILS, on Mr. JOSEPH E. TUZO'S farm, on SATURDAY, the 18th day of OCTOBER next, at ONE o'clock, P. M. List of Prizes offered:—

	SHILLINGS.		
Stallion having stood this summer, 3 prizes .	40 0	25 0	20 0
Stallion 2 years old, 3 prizes	17 6	15 0	12 6
Brood Mare with a Foal at her side, 3 prizes .	25 0	20 0	15 0
Draft Horse, 3 prizes .	17 6	15 0	12 6
Brood Mare having foaled within the last 2 years, 3 prizes	15 0	12 6	10 0
Fillies 2 years old, 3 prizes	15 0	12 6	10 0
Coalts 1 do do	12 6	10 0	7 6
Foals, 3 prizes . . .	10 0	7 6	5 0
Imported Bulls superior breed, aged, 3 prizes .	40 0	30 0	20 0
Do. do. 2 years old, do.	30 0	20 0	15 0
Canadian Bulls, aged, do.	20 0	15 0	10 0
Do. do. 2 years old, do.	15 0	10 0	7 6
Do. do. 1 year, do.	10 0	7 6	5 0
Calves, 3 prizes, . . .	7 6	5 6	4 6
Cows, superior breed, imported, 4 years and over, 3 prizes . . .	25 0	20 0	15 0
Do. do. under 4 year, do,	20 0	15 0	10 0
Do. Canadian, 4 years and over, 3 prizes . .	15 0	12 6	10 0
Do. do. under 4 years, do.	12 6	10 0	7 6
Heifers, imported, superior breed, 2 to 3 years, 3 prizes	17 6	15 0	10 0
Do. Canadian, 2 years old, 3 prizes . . .	10 0	7 6	5 0
Do. Yearlings, 3 prizes .	7 6	5 6	4 6
Do. Calves, do .	7 6	5 0	2 9
Bull or Heifer Calves from imported Cows, 3 do.	10 0	7 6	5 0
Rams, superior imported 2 years and over, 4 do.	17 6	15 0	12 6	10 0
Rams, Canadian or mixed breed, 2 years and over, 4 prizes. . .	15 0	12 6	10 0	7 6
Rams, imported, one shearling, 4 prizes .	12 6	10 0	7 6	5 0
Do. Lambs, 4 prizes, .	10 0	8 0	6 0	4 0
Ewes, superior breed, imported, 4 prizes . .	15 0	12 6	10 0	7 6
Do. others than last, 3 do.	12 6	10 0	7 6	5 0
Ewes, imported, one shearling, 4 prizes .	12 6	10 0	7 6	5 0
Do. Lambs, 4 do .	10 0	8 0	6 0	4 0
Fat Wethers, aged, 4 do.	15 0	12 6	10 0	7 6
Do. do. one shearling, do.	12 6	10 0	7 6	5 0
Boars, 1 year and over, 4 prizes	15 0	12 6	10 0	7 6
Sows, do. do. 4 prizes	12 6	10 0	7 6	5 0
Best litter of Pigs since spring, 4 prizes . .	12 6	10 0	7 6	5 0
Best fat Ox, 4 prizes .	17 6	15 0	12 6	10 0

All entries to be made with the Secretary-Treasurer before 11 o'clock, A.M.

Competitors, &c., to abide by the rules of the Society, already known, as to proprietorship, ages, breeds, worthiness of prizes, &c.

Twenty per cent. from any amount of prizes exceeding twenty shillings, and ten per cent. from any amount of prizes under twenty shillings, will be deducted, and placed, in addition to the original subscription of the respective parties carrying off the prizes.

P. WINTER,
President.
O. T. CONNICK,
Sec.-Treas.

Perce, 11th Sept., 1856. 1 ins. pd.

McGILL COLLEGE,

MONTREAL.

COURSE OF AGRICULTURE AND AGRICULTURAL CHEMISTRY.

BY PROFESSOR DAWSON.

These lectures will commence on the first Monday of November, at 4 P. M. and will be continued every Monday and Friday, until May 1. Thy will include the following subjects :—

CHEMICAL and Mechanical Properties of Soils—Soils of Canada—Organic and Inorganic Constituents of Plants and Manures—Detailed Consideration of the several Crops, their Culture, Diseases and Enemies—Manures, with the cheapest and best methods of obtaining and applying them—Rotation of Crops, its reasons and various kinds in use, enquiry as to possibility of avoiding rotation by use of special manures—Tillage, its principles and practice, sub-soil ploughing, draining, &c.,—Domestic Animals, their breeds and management, the Dairy—Orchard and Garden culture, varieties of fruits, diseases and enemies of fruit trees, small fruits and vegetables.

Students may enter themselve for the *Special Course of Agriculture* as follows :

1ST YEAR.

English composition.	Mathematics.
French.	Chemistry.
Natural History.	

2ND YEAR.

English Literature.	Mathematics.
French.	Agriculture and Agricultural Chemistry.
Natural Philosophy.	

Or Students may remain for one Session only, and take with the Agricultural Lectures such other classes as they may desire and be competent to attend. Fee for lectures on Agriculture 25s, or for all the branches of the Special Course £5 per Session.

The lectures on Agriculture commence in November, to meet the convenience of persons engaged in farming ; but Students desirous of entering for the Special Course, with the view of obtaining diplomas, should present themselves at the opening of the Session on the 10th September.

Important to Agriculturists.

JUST PUBLISHED.

THE YEAR BOOK of AGRICULTURE for 1855 and 1856, exhibiting the most important discoveries and improvements in Agricultural Mechanics, Chemistry, Botany, Geology, &c., illustrated with numerous Engravings by David A. Wells, A. M.

Price 7s 6d.

Philadelphia : CHILDS & PETERSON.
Montreal : HEW RAMSAY.

Crown Lands Department.

TORONTO, 29th August, 1856.

NOTICE is hereby given that the undermentioned Crown Lands in the Township of Montcalm, in the Township of Argenteuil, L. C., will be open for sale to actual settlers, on and after the FIRST day of OCTOBER next, on application to GEORGE KAINES, Esquire, the acting local Agent at Grenville, in said County, on the following terms. viz. :

The price to be one shilling and six pence per acre, payable in five equal annual instalments, with interest : the first instalment to be paid upon receiving authority to enter upon the land,—actual occupation to be immediate and continuous,—the land to be cleared at the rate of two acres annually for each hundred acres during the first five years,—a dwelling house, at least sixteen feet by eighteen feet, to be erected,—the timber to be reserved until the land has been paid for in full and patented, and to be subject to any general timber duty thereafter,—a License of occupation, not assignable without permission,—the sale and License of occupation to become null and void in case of neglect or violation of any of the conditions,—the settler to be entitled to obtain a patent upon complying with all the conditions,—not more than two hundred acres to be sold to any one person :—

TOWNSHIP OF MONTCALM.

First Range.

Lot 2 (90), 3 (63), 4 (64), 7 (115), 8 (114), 9 (114), 10 (113), 11 (112), 12 (111), 13 (110), 14 (109), 15 (108), 16 (107), 17 (106). 18 (105), 19 (104), 20 (103), 21 (102), 22 (101), 23 (100), 24 (99) 25 (98) 26 (87), 27 (82), 28 (96), 29 (79), 30 (88), 31 (100), 32 (100), 33 (100), 34 (73), 35 (32), 36 (81), 37 to 54 inc. (100 each.)

Second Range.

Lot 2 (60 acres), 3 (101), 5 (123), 6 (123), 9 to 25 inc. (123 each), 26 (118), 27 (100), 28 (100), 29 (100), 30 (100), 31 (82), 32 (95), 33 (100), 34 (99), 35 (89), 36 to 44 (100 each.)

Third Range.

Lots 3 to 30 inc. (100 each), 31 (82), 32 (97), 33 (86), 34 (76), 35 (32), 36 (85), 37 to 44 (100 each.)

Fourth Range.

Lots 1 to 20 inc. (100 ea.), 21 (87), 22 (73), 23 (100), 24 (100), 25 (100), 26 (100), 27 (100), 28 (100), 29 (92), 30 (69), 31 (71), 32 (66), 33 (81), 34 (85), 35 (62), 36 (74).

Fifth Range.

Lot 1 (100 acres), 2 (100), 3 (100), 4 (100), 5 (81), 6 (93), 7 (98), 8 (42), 9 (48). 10 (58), 11 (55), 12 (52), 13 (57), 14 (39), 15 (32), 16 (76), 17 (92), 18 (100), 10 (100), 20 to 28 inc. (100 ea.), 29 (84), 30 (88), 31 (100).

Sixth Range.

Lot 1 (19), 2 (16), 3 (47), 4 (65), 5 (75), 6 (59), 7 (51), 8 (51), 9 (31), 10 (72), 11 (76), 12 (100), 13 (100), 14 (100), 15 (50), 16 (24), 17 (41), 18 (59), 19 (92), 20 to 26 inc. (100 each.)

JOSEPH CAUCHON,
3 ins. Commissioner.

BUREAU OF AGRICULTUE AND STATISTICS,
Toronto, 15th August, 1856.

PRIZE ESSAYS.

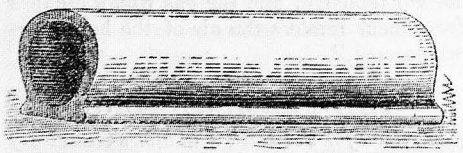
£40, £25, £15.

THE above PREMIUMS will be Paid for the Three Best Essays, respectively, on the Origin, Nature and Habits, and the History of the Progress, from time to time, and the Cause of the Visit, of the Weevil, Hessian Fly, Midge, and such other insects as have made ravages on the Wheat Crops in Canada, and on such Diseases as the Wheat Crops have been subjected to, and on the best means of evading or guarding against them.

The Essay to be furnished to the Bureau by the FIFTEENTH day of JANUARY next, and to be designated by a motto, a copy of which shall be also forwarded in a sealed note with the name and address of the author. The Prizes will be awarded according to the decision of a Committee, to be named by the Board of Agriculture for Upper and Lower Canada, or, in default of any such decision, by the Bureau, the Essays selected to become the property of the Bureau. A premium will only be awarded in case an Essay of sufficient merit is produced.

It is feared that the farmer in his eagerness to produce wheat, is not paying sufficient attention to the danger of over-cropping, and it is hoped the warning, and the information and advice which may be obtained through the Essays sought for, will aid in arresting he great scourges of the wheat.

P. M. VANKOUGHNET,
6 ins. Minister of Agriculture, &c.



Yamaska Pottery and Brick Works.

THE Undersigned is now prepared to receive orders for every description of DRAIN TILES, FLOWER POTS, &c., samples of which can be seen at the Agricultural Warehouse, St. Ann's Hall, over the St. Ann's Market, Montreal.

WM. EVANS, Jr.

Paper, Account Books, &c.

FROM the different Vessels now in Port, the Subscriber has received a large portion of his importation of WRITING, WRAPPING and DRAWING PAPERS,—ALSO—of ACCOUNT BOOKS in very great variety.

Printing and Bookbinding

CARRIED on as usual in all their departments.

H. RAMSAY,
Montreal. 37, *St. Francois Xavier St.*

BUREAU OF AGRICULTURAL STATISTICS,
25th July, 1856.

TO EMIGRANTS AND OTHERS SEEKING

LANDS FOR SETTLEMENT.

The PROVINCIAL GOVERNMENT have recently opened out THREE GREAT LINES OF ROAD, now in course of completion, and have surveyed and laid out for Settlement the Lands, through, and in the vicinity of which those Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "THE OTTAWA AND OPEONGO ROAD," THE ADDINGTON ROAD and "THE HASTINGS ROAD."

The Ottawa and Opeongo Road

Commences at a point on the Ottawa River, known as "Ferrall's", a little above the mouth of the Bonchere River, and runs in a Westerly direction, passing through the northerly part of the County of Renfrew.

It is intended to connect this road with a projected line of road known as "Bell's Line" (leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Brudnell, at a distance of about 53 miles from the River Ottawa, forming with "Bell's Line," a great leading road, or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for settlement a vast extent of rich and valuable land.

This road, and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Lands in this district is Mr. T. P. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from MONTREAL up to the Ottawa River to a place called Bonchere Point, and thence by land come twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

The Addington Road

Commencing in the Townships of Anglesea, in the northern part of the county of Addington near the Village of Flints Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 35 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is Mr. E Perry, who, for that purpose, is now resident at the Village of FLINTS MILLS. The outlines of five townships of very superior land are already surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka, and between it and the River Madawaska. The Townships are called respectively Abinger, Denbigh, Ashley, Effingham, Anglesea, and Barrie.

The direct route to this Section is by way of KINGSTON, Canada West, thence to NAPANEE, either by land or Steamboat, and thence Noth to the Township of Kaladar, and the Village of FLINTS MILLS where Mr. Perry resides.

The Hastings Road

Almost paralled to the Addington Road, and at a distance West from it of about 32 miles is the HASTINGS ROAD. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the OTTAWA AND OPEONGO ROAD and its extensions.

The Government Agent is Mr. M. P. Hayes, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order—The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles, and money is now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce, as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this Section, which is easily accessible, is by KINGSTON, Canada West, thence by Steamboat up the Bay of Quinte to BELLEVILLE, 56 miles—and thence by a good Road to HASTINGS, 28 miles.

In order to facilitate the Settlement of the Country and provide for keeping in repair the Roads thus opened: the Government has authorized Free Grants of Land along these Roads, not to exceed in each case ONE HUNDRED ACRES, upon application to the Local Agents, and upon the following

CONDITIONS:

That the Settler be eighteen years of age.

That he take possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years,—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of settlement are duly performed; after which accomplishment only shall the settler have the right of obtaining a title to the property. Families comprising several settlers entitled to lands, preferring to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot on which they live) provided that the required clearing of the land be made on each lot. The non-accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every information to the intending Settler.

The LOG-HOUSE required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived Settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The Lands thus opened up and offered for settlement, are, in sections of Canada West, capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce, grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighborhood of these three roads will be found to be very similar in quality and character, and covered with every variety of Timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for Manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet,—will produce a Barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate, is about FOUR POUNDS Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a

capital of from £25 to £50, according to the number of his family, will soon make himself comfortable, and obtain a rapid return for his investment. The single man, able and willing to work, needs little capital, besides his own arm and axe—he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these Districts is essentially good. The snow does not fall so deep as to obstruct communication; and it affords material for good roads during the winter, enabling the farmer to haul in his Firewood for the ensuing year from the woods, to take his produce to market, and to lay in his supplies for the future—and this covering to the earth, not only facilitates communication with the more settled parts of the District, but is highly beneficial and fertilizing to the soil.

In all the localities above named, wherever Settlers have surplus produce, there is a good market for it near to them—farm produce of all kinds being in great demand by the Lumber or Timber Merchants, who are carrying on extensive operations throughnot these parts of the country.

According to the ratio of progress which Canada West has made during the last ten years, the value of property on an average doubles within that period; irrsepective of any improvements which may have been made by the Settlers.

In many Counties the value of Land, once opened for settlement has increased FIVE-FOLD in the period named, but the average value of such land, according to the statistics of Canada West DOUBLES EVERY TEN YEARS in the mere lapse of time, exclusive of any expenditure thereon—and it is not too much to expect that this ratio will not diminish for generations to come.

The Sections of Country opened by these roads lie in and to the Southern part of the Great Ottawa Region, stretching from and beyond them to the shores of Lake Huron, to Lake Nipissing, and to the Ottawa River—an immense extent of country whose resources are now seeking and will rapidly obtain development.

THE OTTAWA COUNTRY, lying south of Lake Nipissing and of the great River Ottawa, and embracing a large portion of the land offered for settlement, is capable of sustaining a population of EIGHT MILLIONS OF PEOPLE, and it is now attracting general attention, as the more western portions of Canada are being rapidly filled up;

The Parliament of Canada in its last Session, incorporated a company for the construction of a Railway to pass through this Ottawa country from the Shores of Lake Huron to the City of the Ottawa, and thence Eastward.

A survey of the River Ottawa and the neighbouring Country has been undertaken, and will be completed in the present year: its principal object being to ascertain by what means the River Ottawa can be rendered navigable and connected with Lake Huron so as to enable vessels to pass by that route from the most Western Waters into the River St. Lawrence and the Ocean. These projected works are alluded to, in order to show that the attention of the Government, Parliament and People of Canada has been fixed upon this important portion of the Province.

P. M. VANKOUGHNET,
Minister of Agriculture, &c.

Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the undermentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODDRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl, (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

8th Range.

Lots 1 to 13 incl. (100 each,) 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68,) 6 (69), 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100), 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120) 48 (122), 49 (80).

5 ins.

BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvments to which the Fuud is applicable is close at hand, it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows:—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch. 159, and not already appertioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of those Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified,
W. H. LEE. C. E. C.
P. M. VANKOUGHNET,
6 ins. Minister of Agriculture.

To Engineers and Machinists,

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For sals by
HEW RAMSAY.
Montreal, 1856.

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Montreal: Printed and Published by H. Ramsay, No. 37, St. François Xavier Street.

The Farmer's Journal.

Provincial Exhibition Three Rivers Prize List.

PART II.

CLASS I.
INDUSTRIAL DEPARTMENT.

Judges—Alex. McPherson, J. Rivers, Samuel Tuck, Sherbrooke.

Section.

1. Best collection of specimens of stone, &c., used in buildings, Wm Brooks, Sherbrooke
2. Best specimens of stone, slate, suitable for sculpture, &c, L K Benton, Stanstead
   2nd do W Brooks, Sherbrooke
6. Best plan of a country residence, J Bte Carrier, La Baie
7. Best specimens of machine made-doors, Wm Brooks, Sherbrooke
   2nd do (not by the same manufacturer), Wm Brooks, Sherbrooke
9. Best bundle of shingles, Wm Brooks, Sherbrooke
15. Best samples of drain tiles or brick, Ch Sheppard, St Ours
16. Best samples of flooring tiles or bricks, Ch Sheppard, St Ours
17. Best sample of bricks for building, L K Benton, Stanstead
23. Best iron bedstead, Ch Hughes, Three Rivers

Extra—Best specimens of pine boards, N Philipps, Three Rivers
Do do do do
Machine-made flooring, N Philipps, Three Rivers
Best double stove, John Porter & Co. St Maurice
Best parlor stove, A Laurie & Co., Three Rivers
Best stove, do do
Best Carriage wheel, do do

CLASS II.

Judges.--- V. Bourgeau, Thos. S. Burgess, J. B. Vierge, and L. A. Dubord.

Section.

1. Best sewing machine, W Ribdow, Three Rivers.
10. Best 4 wheeled carriage for one horse, Joseph Tees, Montreal.
    2nd do Ant St Jacques, Yamachiche
18. Best set of augers, W Brooks, Sherbrooke
24. Best single article of cabinet-maker's work, D St Armand, Becancour
    2nd do Ant Robichon, Three Rivers
29. Best display of cooper's work, Wm Brooks, Sherbrooke
30. Best single article of do, Joseph Dubeau, Quebec
32. Best specimen of sole leather, John Pratt & Co, Roxton Falls
    2nd do W Ribdow, Three Rivers
33. Best specimen of upper leather, John Wood, Roxton Falls
    2nd do W Ribdow, Three Rivers
34. Best six calf-skins, dressed, John Wood, Roxton Falls
36. Best specimen of patent leather, W Ribdow, Three Rivers
37. Best specimen of harness leather, John Wood, Roxton Falls
38. Best specimen carriage top leather, John Wood, Roxton Falls
41. Best set double harness, Magloire Couvrette, Montreal.
    2nd do Robert Irwin, do
42. Best set single do, Robert Irwin, do
    2nd do Magloire Couvrette, do
47. Best display of boots and shoes, R Turner, Three Rivers
48. Best single specimen of boot maker's work, R Turner, Three Rivers
50. Best collection of manufactured furs, H C. Balcer, Three Rivers.

EXTRA.

Recommended.

One side board, P Rickaby, Three Rivers
One chest-drawers, do do
One wooden decanter, Joseph Dubeau, Quebec
One shingle machine, N Philipps, Three Rivers
One sett bed screws, do do
One Scotch drill, do do
One tar gumming machine, do do
One collection of wood, D. St Armand, Becancour
One case dentist's work, Dr. Trestler, Montreal
One do Dr Ramsay, Quebec

CLASS III.

Judges.---Thos. S. Burgess and L. A. Dubord.

Section.

44. Best assortment of paper, Wm Brooks, Sherbrooke
    2nd do do do
45. Best specimen of a single kind of paper, Wm Brooks, Shesbrooke
    2nd do do do
48. Best collection of preserved insects, natives of Canada, C Hughes, Three Rivers

CLASS IV.---FINE ARTS.

Judges.---Hon. D. Mondelet and Hon. W. Sheppard.

Section.

1. Best collection of daguerrotypes, P Dupont, Three Rivers
6. Best landscape in oil, (from nature), Canadian subject, Kriecghoff, Quebec
   2ndo do do do
7. Best original oil painting of animals, grouped or single, do do
8. Best portrait in oil, (from life,) do do
10. Best landscape in water colors, Canadian subject, Miss E. Kriecghoff, Quebec

Upper Canada Provincial Exhibition.

It is admitted by all parties that the Exhibition at Kingston this year has surpassed anything of the kind ever before held in Upper Canada, and I am happy to inform you that the enthusiasm amongst the people to view the grounds remains unabated.

The testing of ploughs commenced on Thursday afternoon, between two and three o'clock, on the ground of Mr. Vaugh. It was stated that the ground was not at all suitable, on account of the number of stones and the great length of the grass, which was mowed before harvest, and the summer crop being on the field.

There were seven or eight ploughs, amongst which were two iron ones, belonging to Mr. Patterson, of Montreal, and Mr. Jeffrey, of Petite Cote. There were a number of other ploughs entered and upon the show grounds, which were not tried. After ploughing six or seven furrows each, the decision of the judges was declared as follows:—

Iron Ploughs.—1st prize, Mr. Patterson, Montreal; 2nd prize, Mr. Jeffrey, Petite Cote.

Wooden Ploughs.—1st prize, Mr. Modland, Bramton; 2nd prize. Mr. Bingham, Norwich, Co. Oxford, C. W.; 3rd prize, Mr. M'Sherry, St. David's, C. W.

The competitors and judges were unanimous in their opinion, that a fair trial had not been taken, on account of the unsuitableness of the ground.

Six judges were appointed, but only three reported.

A meeting of Delegates of the Association was held this morning for the purpose of electing officers for the ensuing year, and to take into consideration the *locale* of the next exhibition. The following gentlemen were elected:---George Alexander, Co. Oxford, President; D. B. Stevenson, M. P. P., Prince Edward County, 1st Vice President; W. Ferguson, Frontenac, 2nd Vice President; R. L. Denison, Treasurer; and G. Buckland, Secretary by Act of Parliament.

At this meeting it was decided that the Annual Exhibition of 1857 will be held at Brantford, Co. of Brant, and to take place on the last Tuesday in September.

A vote of thanks was carried by acclamation to the Baron de Longueuil, the Local Committee, and the ladies of Kingston, for their great exertions and trouble in connexion with the exhibition.

Baron de Longueuil has given £25 worth of hay to feed the cattle of exhibitors whilst on the ground; and also £15 for the best

labour saving machine, which was awarded to Mr. Patterson, of Belleville.

I must not omit to mention that W. Ferguson, Esq., Dr. Litchfield, J. B. Marks, Esq., the Chairman of the Local Committee, and Thomas Briggs, Esq., the Treasurer, have been indefatigable in their exertions in promoting every object in connexion with the Exhibition.

The glass for the Kingston Exhibition was supplied by Messrs. Chance, Brothers, & Co., Birmingham, England, and is of the same quality and texture as that supplied by them for the great London Exhibition of 1851, and for the Sydenham Palace.

The ornamental and painted glass was supplied by Messrs. Hall & Sons, of Bristol, England, and by Mr. Spence of Montreal. Much of it was of beautiful design, and of rare execution.

I understand that Messrs. Hall & Sons forwarded the ornamental and stained glass gratuitously, with a view to encourage the introduction of such articles into Canada.

Between two and three o'clock this afternoon the President delivered his address on a platform in the centre of the grounds. Amongst those present were the following gentlemen :—J. B. Marks, Esq., Kingston ; W. Dow, Esq., Montreal ; W. Ruston, Esq., Kingston ; W. Wilson, Esq., ditto ; the Hon. Mr. Seymour, J. W. Macpherson, Esq., Kingston ; C. Pennoyer, Esq., O. S. Gildersleeve, Mayor of Kingston ; W. A. Geddes, Esq., Judge M'Kenzie, D. Roblin, Esq., M.P.P. ; D. B. Stevenson, Esq., M.P.P. ; Thomas Briggs, Esq., &c.

After the delivery of the address three cheers were given for the Queen.

Mr. Thompson, of Toronto, then proposed a vote of thanks to the President, the Baron de Longueuil, which was carried by acclamation.

The Baron having returned thanks,

The Secretary, Mr. Buckland, read the list of prizes awarded.

After which there was a procession of the animals round the ground in the order in which they received prizes.

The following is a description of the stock of horses, cattle, sheep, pigs and poultry :—

HORSES.

The show of horses was considerable, and the descriptions appeared to realize the expectations of visitors. This refers to the specimens of the Clydesdale and Canadian breeds. There was an excellent display of carriage horses, some good blood horses, and very fine heavy draught ; but only a poor display of stud horses. There were three fine specimens of three year old colts. Mr. Clarke, of Nepean, Carleton, exhibited a dark brown nine-year old stallion, "Tweeddale," of Dutch breed, and sired by "Ploughboy," which obtained a second prize. This fine stallion obtained a first prize at Brockville, weighs 16 cwt., and stands 17 hands. He is well adapted for agricultural purposes, and is worthy the attention of farmers for breeding purposes. The Agricultural Society of Carleton had him to serve mares for two years, and he was highly thought of. Mr. Tilton, of Montreal, exhibited a fine grey horse, four years old, stands 16¾ hands, and weighs 12 cwt. This horse was much admired. The following are the principal successful competitors in this department :—

Thorough-Bred Three Year Old Stallion —First prize, Messrs. Dew & Nightingale, of York.

Thorough-Bred Two Year Old Stallion —First prize, Mr. Stewart, of Elizabethstown, Leeds.

Thorough-Bred Three Year Old Filly—First prize, Mr. Davy, of Bath.

Agricultural Stallion—First prize, John Sanderson, Markham, York ; second ditto, Mr. Clarke, Nepean, Carleton.

Heavy Draught Stallion—First prize, Mr. Torrance, Scarboro.

Three Year Old Stallion—First prize, Mr. Davis, York township.

Yearling Colt—First prize, Mr. Gibb, Toronto township.

Three Year Old Filly—First prize, Mr. Lake, Newbury.

Saddle Horse—First ppize, Mr. Carson, of Kingston ; second ditto, Mr. Tilton, Montreal.

SHOW OF CATTLE.

The specimens of cattle exhibited were not numerous, as compared with former exhibitions ; and this can only be accounted for by the fact, that farmers in the vicinity of Kingston do not turn their attention so much to the breeding of stock as farmers further west. Another reason assigned is the difficulty of bringing cattle across the lakes. But if the specimens exhibited were not numerous, the descriptions were certainly very superior, and this refers especially to the magnificent display of the Durham and Galloway breeds. In Grade cattle the specimens were not very numerous, but some very superior animals were exhibited, particularly one belonging to Mr. Miller, of the township of Markham. Fat cattle was but poorly represented, there being but two specimens on the ground. There were twenty-one yoke of working cattle, and six yoke of three year old steers, but they were only middling specimens.

DURHAMS.

These animals have never been excelled at any previous Exhibition. Mr. Davis, of Etobicoke, York, carried off the first prize for a beautiful three-year old bull, and Mr. Stone, of Guelph, received a second prize. Mr. Wade, of Port Hope, and Mr. Stone were the successful competitors for short-horned cows. It was stated that Mr. Stone's stock have been lately imported, and that Mr. Wade's were bred from imported animals. For bull-calves Mr. Stone carried off the first prize. In the class of aged bulls there was little competition, the only good bull amongst the lot being Mr. O'Neill's of Paris, Brant, who received a first prize.

AYRSHIRES.

The specimens of this class of animals were chiefly exhibited by parties from Lower Canada, and the Hochelaga Society have taken first prizes in the different classes, all their stock being imported. Mr. Logan has also been very successful, as he carried off first and second prizes for cows and heifers. It has been stated that Mr. L. refused £25 cash for calves of three months old, £50 for a yearling heifer, and £50 for a cow.

DEVONS.

In this class there were but few specimens, but those exhibited were very good. The Devon breed are considered the best for working oxen. Amongst this class we noticed a three-year old heifer, just imported from the stock of Mr. Quartly, of Northmolton, Devon, England. Mr. Longley, of Shefford, obtained a first prize for an aged bull.

HEREFORDS.

But few specimens, and rather inferior.

GALLOWAYS.

The judges stated in their report that they considered this breed of cattle very valuable, and well adapted for the Canadian climate.

SHEEP.

The different breeds were but thinly represented on the grounds ; those exhibited, however, were excellent specimens. The Leicesters, especially some imported rams, were considered superior. Mr. Petty, of Hay, Huron, exhibited a splendid two-year old ram, which obtained the first prize. The ewes, also, were of a superior quality. Mr. Stone exhibited a quantity of Coltworths', which were greatly admired. The specimens of South Downs and Merinos (Spanish and French) were good

SWINE.

In this class there was a good display of the different breeds, both in size and quality.—Amongst the specimens exhibited the Suffolk were much admired. The Montreal Agricultural Society's imported boars carried off many of the premiums. Mr. Scott, of Montreal, took a second prize for a large breed boar, one year old.

POULTRY.

In this department there was a very large and excellent show of the different breeds, consisting of Cochin China fowls, Bramah pootras, Shanghae, Dorkings ; several distinct varieties of Poland, viz., black, white, silver, and golden ; a few specimens of black Spanish, Sumatra game and Dominiques ; a variety of bantans, two coops of Crimean, and a variety of Japan fowls. The Japan specimens were much admired, as they were covered with a down of a silky quality. The ducks and geese were excellent specimens, both for size and qnality, and Mr. Lamb, of London, C. W., was the successful competitor for a great number of the premiums. Mr. Kuper, of Chambly, received a second prize for two specimens of Chinese geese. These geese have been known to raise two and three broods in one summer. These birds are very domesticated and take

great care of their young. By crossing them with the Bremen geese they greatly increase in size, and yield more feathers. Mr. Kuper introduced these birds into Lower Canada about two years ago, and he states that they stand the climate as well as the native geese. There were a variety of turkeys, guinea folws, and pigeons exhibited, but as the cases were so small, the birds did not show themselves.- -*Herald.*

KINGSTON EXHIBITION.

Prizes taken by Lower Canada at the Provincial Exhibition, Kingston :

Saddle Horses, S P Tilton, Montreal, 3rd
Devon Bulls, E Longley, Shefford, 2nd
Ayrshire Bulls, aged, T Irving, Montreal, 2nd
Do. 4 years old, T Irving, Montreal, for Hochelaga Agricultural Society, 1st
Do. 3 years old, Do do do 1st
Do. 2 years old, Do do do 1st
Do. 1 year old, Do do do 1st
Bull Calf, James Logan, Montreal, 1st
Best Cow, Ayrshire, Do do 1st and 2nd
Ayrshire Heifer, 2 years, James Logan, Montreal, 1st, 2nd and 3rd
Ayrshire Heifer Calf, Do do do 1st and 2nd
Large Breed Boar, J Scott, Montreal, 2nd
Do. 1 year, Hochelaga Ag. Society 2nd
Chinese Geese, A Kuper, Chambly, 2nd
Barley, 2 rows, J Logan, Montreal, 2nd
Mangol Wurzel, red, Do do 3rd
Do. do yellow, Do do 2nd
Sugar Beet, Do do 3rd
Pumpkins, J Gilmour, Quebec, 1st
Hot House Grapes, Wm. Lunn, Montreal, 1st
Black Hambro, Wm Lunn, 1st
Heaviest Clusters, Do do 1st
Basket Grapes, J Smith, Montreal, 1st
Montreal Horticultural Society, Grapes, four varieties Peaches, Nectarines, 16 varieties Apples, 10 sorts Pears, 38 sorts Apples, 4 sorts Peaches, Apples (W Lummey) Montreal, several new vegetables and fruits worthy of commendation were exhibited.
Red Cabbage, J Gillman, Quebec, 2nd
Dahlias, Hon J Young, Montreal, 1st & 2nd
Do. Montreal Horticultural Society, 3rd
Cheese, A. Cass, Hawkesbury
Pleasure Harness, Irwin, Montreal, 2nd and 3rd
Shako and Rifle Hat, McDowall and Atkinson, Montreal
Bear Skin Robe, Green & Sons, of Montreal, made for Sydenham Exhibition
Stained Glass, J C Spence, Montreal
Writing Paper, J Chalmers, Montreal, 1st 2nd and 3rd
Printing Paper, Do do 1st and 2nd
Wrapping do, Do do 1st and 3rd
Horse Cart, J Jeffery, Petite Cote
Double Mould Plough Do do
Cast Iron Work, Wm Rodden, Montreal
Stoves, Wm Rodden, 2 prizes
Scales, Do do 3 do
Piano, Hood, Montreal, 1st and 3rd, Seybold & Co. 2nd
Window Sashes, James Shearer, Montreal, 1st, J Ostell, do 2nd and extra.
Sewing Machines, W Berry, Montreal, 1st

———:o:———

Valuable Letter on Drainage.

The following letter appears in the Albany Cultivator for September, 1856, and is well worthy the attention of Agriculturists generally.

Messrs. Tucker & Son—I write you to say I have finished draining my farm. I may put in a few in spots in different fields where I have not been thorough enough, but the whole cannot amount to more than 200 rods. I took up the first drain I ever laid, to dig it deeper, in order to drain a flat of land adjoining. It is nearly 18 years since the tiles were laid. People would ask me if my crockery would not decompose, laying it in the earth, and my money all be lost. These inquiries were in my early stage of draining. Many thought it would make the land cost more than it would come to, and some would say it would never pay.

Now, Messrs. Editors, I have finished, and I can speak to a certainty. I firmly believe I can take a farm similar to this, and with $400 or $500 drain it, every acre, complete. Don't start now until I explain myself. With that $400 or $500 I would at least drain twenty acres very thoroughly, and get two crops of wheat from that twenty acres. The excess of crop over what it would have been had I not drained it, would at least give me back my money again to go on and drain twenty acres more. I never gave the drained land rest until it paid back the cost of drainage, so you can readily perceive that it don't need much capital after all to drain a farm. It requires good management & enterprise to get along with it, and the owner of the land to have it done under his own inspection, and have it done so that he is sure it will thoroughly dry the land. He is only loaning the money to the land for one or two years; after that he gets it returned; and every two or three years during his life-time it is again returned; therefore you and your subscribers can readily perceive that capital for draining is not so much needed as it would appear to be.

I have tried to explain this as well I can, as I often hear farmers say, as soon as I can get some spare money I shall go to draining; but I know no better way to get spare cash than to drain the land. I had many things to contend with when I commenced—great cost of tile, and double the cost and more for digging, with public opinion desperately opposed to that mode of improving the land. But draining is the great radical improvement; it is the ground work of all other improvements. Clay soils are much easier cultivated; ten loads of manure will do more good on drained land than three times as much on wet or even damp land. I have no doubt whatever, but the crops in New York State can be far more than doubled by a thorough course of drainage, and no country I ever saw requires it more than Ohio and Canada, at least what I have seen of those countries.

A number are engaged at draining slowly in this section, but it vexes me, (or as a Scotchman would say it angers me,) to see how imperfectly some of it is done. Some have bad outlets, some trust the work to men who have dug many ditches, and think that they must know how it should be done. Such men, or some of them cheat their employers shamefully. I know at least one farmer, who, when he went to ploughing his drained land, plowed up his tile, and I know more that plow them up whenever they study their own interest by deep culture. I was on the farm of a Mr. Humphrey in Ontario county, a few week ago. He deserves great credit for what he has done in draining. He has drained a great deal of swamp land, that a few years ago was worse than worthless, as it then bred pestilence. Now he has more than sixty acres of that worse than worthless land let at a rent of eight dollars per acre a year—part to raise corn and part peppermint, and he says it is worth a great deal more. Some of it he cultivates himself, and I saw a field of wheat which is the fifth in succession, year after year, and I assure you it is a good crop and early. I saw another field, oats, equal to anything I ever saw. Mr. H. was engaged digging many of his ditches deeper, and now making them from 5 to 6 feet deep. The water comes out at the base of sand hills, of which his upland is mostly composed, and he has only to tap the base of these sand hills, and then keep the water under ground until he reaches his outlets, and it is not expensive draining after all, although to be perfect he has to get down to the gravel some 5 to 6 feet deep, but the earth being porous the drains admit of being wide apart. This is one striking instance of what draining will do, although it don't show what draining will accomplish on upland; yet I have no doubt but there are millions of acres in the State of New York like Mr. H.'s, that might be so improved if they were owned by men of enterprise. Mr. H. is a thorough bred American. I had always thought it required some foreign blood to make an enterprising drainer, but he is one exception.

J. Johnson, *Near Geneva, N. Y. July* 11, 1856

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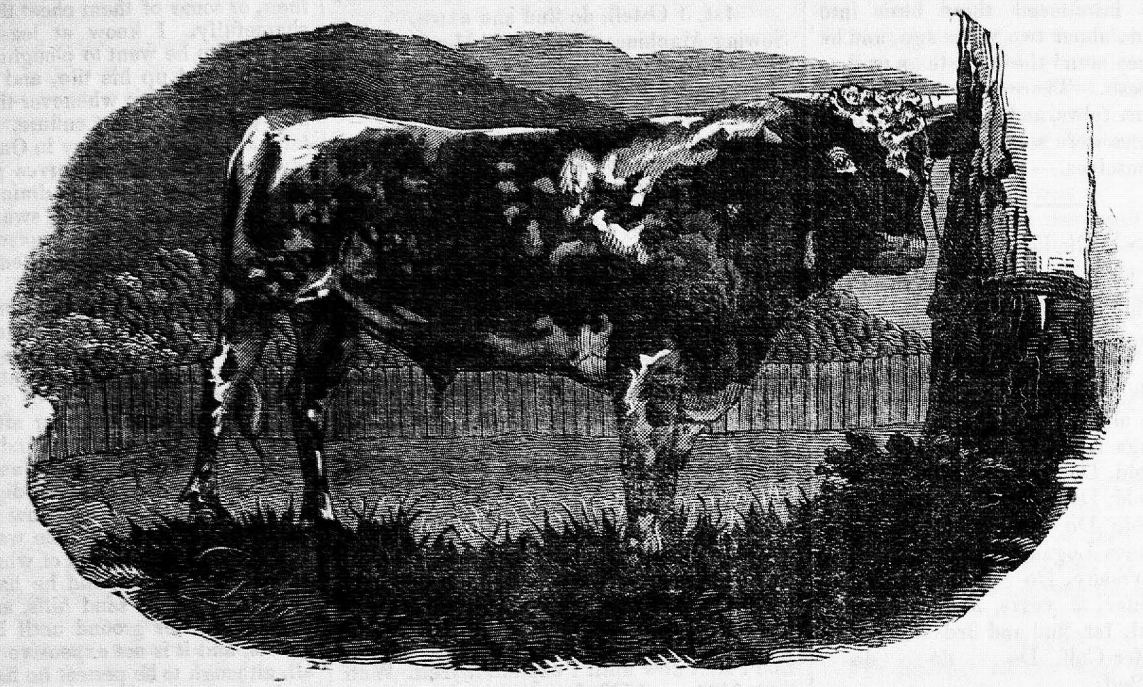
Hot Beds.—Some gardeners make their beds on the level ground, but it is always safest to make them in pits from eighteen inches to two feet deep; in order to do this, the pits should be dug in autumn, or a heap of dung may be deposited on the ground intended for the beds before the frost sets in, and good earth may be obtained from the pits without difficulty.

The frames should be made of good sound planks; the back plank may be two feet wide, and the end ones may be so sloped as to make fifteen inch plank do for the front. A frame calculated for four sashes, of three feet in width by six in length, as above described, should be nearly thirteen feet long, and about six broad at the top.

The frame being set over the pit and properly fastened, the fresh dung should be spread regularly in the pit to the depth of twenty to twenty-four inches; if the dung be in a good heating condition, cover it six or eight inches deep with mould, then lay on the sashes, and protect the beds from the inclemency of the weather. In two or three days the rank steam will pass off; it will then be necessary to stir the mould before the seed be sown, to prevent the growth of young weeds that may be germinating; then sow the seed either in shallow drills or broadcast, as equally as possible, reserving a small quantity of warm mould ot be sown lightly over the seed.—*Bridgman's Gardener's Assistant.*

We have received from Quebec, the following woodcut of the Prize Bull Ben, and have much pleasure in publishing it.



The Bull Ben is three years old, is the property of the Quebec Lunatic Asylum, and was bred and reared by the undersigned.

His sire was of the pure Ayrshire breed, and was imported by John Gilmour, Esq.. His dam is owned by the Quebec Lunatic Asylum, was imported by Alex. Simpson, Esq., and is also of pure Ayrshire breed.

"Ben" has now taken three prizes, one as a yearling, at the Provincial Exhibition in 1854, and last year at the Quebec County Show, and lastly, at the present show held last week at Three Rivers, when he was very much admired for his excellent breeding qualities.

He was considered by the Judges at Three Rivers, a splendid animal, not large, but finely marked, and of perfect symmetry of form.

He is now for sale.

G. Wakeham, *Warden Q. L. A.*

Agricultural Communications.

In looking over our American exchanges, we find them filled with original communications and inquiries relating to a great variety of subjects. Many of these letters are, it is true, crude and hasty in style and thought, and very unsafe as guides to practice; but all of them contain useful hints, and they indicate an inquiring and active turn of mind, which though often astray and slow to attain perfection in theory or practice, tends to promote improvement. One important use of these productions is that they indicate the active condition of agriculture in the districts to which they relate, and thus enable those where knowledge is more advanced to correct erroneous impressions and instil new truths.

In our exchanges from Britain and Ireland, something of the same kind is observable; but in a different form. The agriculture of Great Britain is in a much more advanced condition than that of the United States. The large farmers and proprietors have familarised themselves with the principles of agriculture, while the working people are highly skilled in its practical processes; and capital being abundant and labour cheap, all these processes can be brought very nearly to perfection. It thus happens that while in America agriculture is generally a series of make shifts with little order or system, in Britain fixed principles and settled methods of practice are recognised, and the ground of discussion is much narrowed, while there are fewer teacher,, and instead of a shower of desultory communications, we have a few comparatively elaborate articles. British agricultural journals, however, have often whole pages filleb with short queries and answers,in which the editors evidently avail themselves of the best authorities within their reach, and thus often give really valuable items of information.

We refer to this subject for the purpose of again asking our readers, in one of these forms or the other, to aid our labours. We shall be equally pleased to receive from them long articles or short queries, and shall do what we can to place before the public in the best manner everything new or useful contained in such communications, while we shall be glad to increase in this way our own information respecting the wants of farmers and the best means of improvement.

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To preserve Lard sweet.—Instead of putting it into large vessels, put it in stone crocks, or jars, of from one to four gallons each; when cooling or thickening, put in your salt, which will mix through the the lard, instead of settling on the bottom of the crock. The next day take clean bits of cotton cloth, rather larger than the top of the vessel, and after putting it smoothly down, and pressing the edges snugly around so as to exclude all air, pack in a close layer of salt, then lay over another piece of cotton cloth, and turn over it a plate or a cover which will fit tightly; then tie over two thicknesses of paper, and set it in a cool, dry place. In this way I have kept lard perfectly sweet eighteen months. Crocks of butter should be kept in the same way.—*Correspondent of Michigan Farmer.*

The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 7, Montreal, November, 1856. **POSTAGE FREE.** **Price 2s 6d per annum, in advance.**

The Farmer's Journal.

Reclaiming Bogs and Swamps.

We copy two articles on this subject in our present number, and would direct particular attention to them as indicating one of the most profitable kinds of agricultural improvement. Much work of this kind can be done in the drier weather of autumn after harvest. This is a favourable time for draining, for pulling and burning roots and tough sods, and hummocks, and also for digging bog muck preparatory to hauling it to the barn yard in winter. It is a very good practice to sow down bog lands with grass in autumn, as well as to give them at this time a top-dressing of sand or loam, which will not, however, be of much service unless the land has previously been drained.

We observe at this season, in our American exchanges, much discussion respecting the burning of bushes in autumn, and no doubt the dry weather of autumn presents a very favourable opportunity for such work, as well as for generally clearing the rougher, overgrown, or weedy parts of fields. Where, however, large tracts of alder, or other bushy swamps are to be drained, a cheaper practice is to run through some leading ditches in autumn; then in early winter when the swamp is frozen, to cut the bushes close to the ground with a heavy hoe sharpened to a cutting edge. This makes very clean and easy work, and the bushes can be piled and burned early in spring, or, what is better, hauled in winter and used as fuel, alder being one of the best kinds of wood for this purpose.

We beg leave to remind our agricultural friends that the Course of Lectures on Agriculture and Agricultural Chemistry in McGill College, will open at 4 o'clock on Monday, Nov. 3, with a lecture open to the public. We hope that many persons interested in the improvement of farming will be present, and that a number may connect themselves with the class.—*See advertisement.*

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The Farmers' Friends and his Enemies.

Under this head, we propose to make a few remarks occasionally on the animals and plants that are either beneficial or hurtful to the farmer, by their influence on his crops and his stock. We are sorry to say that in this unfortunate fallen world, where man has to struggle for his subsistence with the thorns and thistles and the wild animals, the enemies of the farmer in his operations are at least quite as numerous as his friends, and obtrude themselves much more on his attention. We do not believe, however, that farmers in general think or inquire enough into these subjects. On the one hand the terrible destruction wrought by some of the most insignificant creatures teaches us our dependence upon Divine Providence, and our impotence in presence of even the feeblest agencies under the control of Omnipotence. On the other hand, it is only by the careful study of these creatures, in all their habits and modes of life, that we can hope effectually to guard against the ravages of those that are destructive, or properly to cherish and cultivate those that are beneficial. It is at once folly and a criminal neglect of the means of welfare that have been placed within our reach, either to destroy creatures that have been placed in our country for purposes beneficial to us, or to permit our crops to be injured by destructive creatures when we could devise plans for the prevention of the evil. This is one of the points in which Agriculture connects itself with Science, and it is only by availing themselves of the methods and results of natural history, that farmers can prosecute such inquiries with success.

To promote such studies and show their practical bearing is our present object; and in the remainder of this article we shall endeavour to do so by referring to the uses of birds to the farmer.

It is often remarked that birds are less abundant in North America than in Europe. The long and severe winters have something to do with this; but it mainly arises from the recent cultivation of the country, which has dispossessed the original forest birds, which are, however, comparatively few in number, and has not yet introduced those which frequent cultivated ground, the breadth of cultivated ground suitable for these being increased almost as rapidly as their numbers can be multiplied to occupy it. A very important cause of scarcity of birds is also the unrestricted operations of sportsmen, and especially of boy sportsmen. From this last cause the deficiency of birds is even greater in the vicinity of our large towns than in the country.

We wish to impress upon farmers and gardeners the fact that this deficiency of small birds is directly connected with the

rapid multiplication and immense numbers of injurious insects. Certain tribes of small birds are the natural check on the increase of these creatures, and this check cannot be withdrawn without serious injury. Every swallow that wheels around our houses destroys in the course of a summer enough of flies to fill a kitchen with an Egyptian plague. His daily consumption, when feeding his young would blacken our breakfast table, and fill with maggotts several carcases of meat. Every night-hawk that flits through the orchard is snapping up hundreds of moths, that are there to deposit the eggs for next year's swarms of caterpillars. The king-bird watching patiently on stump or fence rail, the robin carefully hopping over the ploughed field, the fly-catchers, flitting from bough to bough, the warblers, titmice and creepers, minutely searching every leaf and crevice of bark, even the woodpeckers, labourously surveying the trunks of trees to discover hidden burrows of grubs, are all hard at work in behalf of the farmer, as are multitudes of other birds; and even in the wild woods the labours of these creatures serve to prevent the increase of insects that would eventually overspread the gardens and orchards.

When the farmer neglects to cut down his thistles, the goldfinches and some other small birds of the same tribe come to the rescue, and may be seen in autumn tearing open the prickly heads and destroying the seeds as energetically as if they knew that upon them depended the existence of the slovenly agriculturist. Many other finches, though they now and then rob us of a little grain, do far more service than the value of such little appropriations by eating the seeds of weeds in spring and autumn, and by collecting grubs to feed their young in summer. In like manner, though the blackbird sometimes destroys corn and the robin consumes many cherries, they take in this way very small wages for their services as insect destroyers.

How thankful ought the farmer to be that these creatures, so beautiful, so melodious, and so useful, have been provided to aid him; and how carefully ought he to protect them against injury or destruction. He should, indeed, view the destruction of the small birds on his farm much in the same light with that of his poultry; and should regard hawks, idle boys and ignoble sportsmen intent on the pursuit of such game, with all possible aversion. This subject deserves the attention of the legislature, of municipalities, and of agricultural societies, as well as of the individual farmer and gardener; and we trust that the above few remarks may tend to call attention to the claims of the numerous feathered *friends of the farmer*.

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Bone Manure.

A correspondant, who signs himself "An East Lothian Farmer," informs us that a Bone Mill is now in full operation in the District of Quebec. He says:—

"I hope all those interested will give it a fair trial and report accordingly. It is the first establishment of the kind in this part of the country. On referring to a late number of the ***Mark Lane Express***, I find it stated that the annual value of the ground bones used in England, principally for turnips, is said to be £200,000 sterling. In regard to Bone Dust I have used it extensively, both in England and Scotland, for the last twenty years; and can speak to its efficacy as a fertilizer for all kinds of crops. It was the first cause of bringing the turnip husbandry of Scotland to its present high cultivation. I have examined the sample of Bone Dust now on sale at the store of Messrs. Tremain, St. Paul Street, and find it equal to any that I have used in Great Britain. I must say it was a praiseworthy move of Messrs. W. H. Anderson and M. Davidson, two of the late Directors of the "County of Quebec Agricultural Society," to bring forward a measure of such infinite advantage to agriculture, considering the high price of stable manure, and the great need of increasing the cultivation of root crops for our long winters."

We concur with our correspondent most fully in the high value which he assigns to this kind of manure. On all soils and crops it will be found most beneficial, more especially on light soils, and for root and grass crops; and though it will not do away with the necessity of other manures, it will vastly increase their efficiency, as well as to a great extent supply their place when deficient. On run-out soil especially, its value is always great. Agricultural Societies should do all in their power to encourage and extend the use of bone manure, and every farmer should at least make such experiments as may satisfy him as to its efficacy.

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To raise early Cucumbers and Tomatoes.—Place pieces of inverted turf just beneath the surface of the soil in a hot-bed, and on these plant the seed. As soon as the time for spring frost has passed, lift out carefully the pieces of turf with the growing plants, and place them in highly manured ground where they are to complete their growth. No check is received by this removal. If there appears afterwards any probability of a night frost, cover them with boxes, or other things most convenient. If the foregoing operations have been conducted with tolerable care, cucumbers may be gathered in eight or nine weeks from the seed, and tomatoes in fifteen or sixteen weeks. Do not, ordinarily, plant anything between the hills, as lettuce, radishes and cabbages; they will be sure to make the bed too thick and close, before they have got their growth.—*N. E. Farmer.*

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Correspondence.

Petite Côte,
Montreal, *Oct.*, 1856.

Sir,—I perceive that some of the newspapers and the Agricultural Journal in particular, have made a mistake in publishing the Prizes at the late Provincial Exhibition, held at Kingston, C. W. They say that Mr. James Patterson, Montreal, took the first prize for the Iron Plough. This is a mistake. I was awarded the first prize for the Iron Plough, and the extra prize for the Double Mould Plough, and that is the second time that my Ploughs have taken first prizes in Upper Canada and the fourth time at the Lower Canada Provincial Exhibition. If you will be so kind as give the above a place in your valuable paper, you will much oblige your most obedient servant,

James Jeffrey.

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Time to set Apple Trees.—October is one of the best months to transplant apple trees. After the frost has so nipped the leaves as to stop the circulation of the sap, the trees may be taken up and transplanted.

It is a question whether this work is best done in the fall or in the spring. Each season has its advantages. We have more time in autumn, and as we can so easily bank up the tree with earth to support it, and to keep away the mice, we need not fear to set our best trees as soon as they cease to grow.

If any one would set trees before the frost has nipped the leaves, he may do it by first stripping off all the leaves, for these will no longer draw forth the sap, and no risk will be run even when the trees are taken up in September.

By throwing up a little bank around each tree at this time of year the labour of staking will be saved, and the mice will do no harm unless the trees are set near some old wall, in which case particular care should be taken to guard them.

The mulching may all be done in the spring after the little mounds are levelled down—or it may be done at the time of setting, provided proper care is taken to cover up all the straw, &c., about the trees.

After all it is of but little consequence how or when trees are set, unless you take care to procure good ones. If you take the refuse trees from a nursery—or buy them of

a strolling dealer in cheap articles, you may as well set them in one way as in another. But good trees will be sure to produce fruit by the fourth year after setting.

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ONIONS.—If you want the best crop of onions you ever saw, spade or plow your land deep, and manure it highly with the droppings of the hen-house. Roll the surface smooth, and scratch it with a fine rake before you mark off your rows. There is no trouble in raising twelve to fifteen bushels of onions upon a bed a rod and a half square, by using hen manure. Try it.

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Reviews.

THE ILLUSTRATED ANNUAL REGISTER of Rural Affairs and Cultivator Almanack for 1857. Albany, L. Tucker & Son; Montreal, H. Ramsay. Price 1s 3d.

This little work is as usual prettily illustrated and full of interesting matter. It has several good articles on the culture of fruit, supplementary to those in former numbers, and alone worth far more than the price of the book; and we might say the same of the articles on farm buildings, ploughs and many other matters. It must be pleasant to the farmer to have on his table an almanack which gives so many useful hints, and contains so much interesting reading; and the series will in a few years form quite a treastise on husbandry.

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Review of the Agriculture of Lower Canada, by William Evans, Esq., Secretary-Treasurer of the Board of Agriculture of Lower Canada; Salter & Ross, Montreal.

This pamphlet of forty-three closely printed pages, contains a series of letters originally published in the *Montreal Gazette*; and giving a very thorough and truthful representation of the pressnt state of Canadian Agriculture and the best means for its improvement. The long experience and sound judgment of the author should commend it to the attention of farmers, and we are sure that no one interested in the real advancement of practical agriculture can more profitably spend a few hours than in its careful perusal.

Mr. Evans says, in one of his letters, that he has been writing on the subject a quarter of a century without witnessing that improvement which he could desire. He may however, rest assured, that his instructions have not been altogether lost, and that they will continue to bear good fruit in many coming years. Those who deprive themselves of the opportunity afforded by this publication of becoming acquainted with the results of his experience and reflection, will be serious losers.

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Chinese Sugar Cane.

We have seen a specimen of this cane from the garden of Mr. Sheppard, of this city, more than ten feet in height, and with stalks nearly an inch in diameter. It is a most graceful plant in appearance, and if it is capable of cultivation on ordinary farms as well as in gardens, may prove an addition to the useful resources of our country, especially in the warm and more sheltered districts of the province. We copy the following account of it from the *Boston Traveller*:—

Have you seen any account of the new variety of sugar cane—the Chinese Sugar Cane—lately introduced to our agriculturists through the Agricultural bureau of the Patent office? If it is worth half what is claimed for it, the plant is a wonder. First, it produces sugar, the juice having from fifteen to twenty-five per cent. of pure saccharine, varrying according to the soil and climate. Then as fodder it will yield twenty-five tons to the acre; cattle, horses and hogs devouring stalks and leaves with the greatest avidity. As a green crop it will produce a great mass of vegetable matter to turn in and enrich the soil. As fodder it will produce two crops in a year, or a good growth of it can be grown for stock by sowing after wheat or other crops have been harvested. It is equally good for cattle and horses dry or green. The juice can be made into a most delicate drink that can scarcely be distinguished from champagne. I've not done with it yet. That same juice —set with alum—will color silk a beautiful red. One thing more; after that, taking the leaves to feed stock, the roots to manure the land, and the juice to make sugar, champagne or coloring matter, the refuse of the crushed stalks can be manufactured into an elegant article of paper.

The tops, when cleaned of the seed; make capital brooms, and the seed itself, ground into meal or fed whole will fatten any kind of stock, from chickens up to elephants.

There! If that is not a catalogue of virtues for one plant, that you can appreciate and admire, then I must say you do not deserve the gifts of Ceres or Pomona, or any of "the goods the gods provide." There is an acre or so of this cane growing here at Washington, on Uncle Sam's own land, near the Capitol, and a prettier sight in farmer's field cannot be found. It looks something like corn, tall, graceful stalks, and long taper leaves. One great advantage is, that it will grow in all climates of the Union, from Tampa Bay to Canada.

Another advantage is, that it can be propagated from the seed, as it will ripen all over the Union; while the Louisiana cane has to be propagated by cuttings, taking twenty per cent. of the stalks of the entire crop for the next year's growth. As in the case of all plants propagated by cuttings, there is a constant deterioration, so that in many parts of the South the growth of cane is not over two-thirds as much as it was some years ago, and that on equally fertile soil.

I send you some papers of the seed. This came from China, and was first obtained by a traveller, and tried at the Cape of Good Hope, and then in Europe. China covers about the same parallels of latitude as this country, and sugar is made from this cane in all parts of the empire. Plant this seed, some of it now, and see how large a growth you will get by October. Of course it is pretty late for this year. Enough has been distributed over the country to give it a trial, and in a year or two we shall know more of it. Last year a man in Georgia tried some of it, and being asked how it turned out: "Really," said he, "I can't tell, for it was so good my children and the niggers eat it all up."

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Noxious Insects.

We are very glad to observe that public attention is beginning to be attracted to this subject, and that the Minister of Agriculture has ventured so far to depart from the circle of official routine as to wage war against the insect destroyers of the wheat crop, by offering prizes for the best essays on the habits of those creatures, and the methods of preventing their attacks. It is only by careful study of the habits of injurious insects that we can hope to avoid their ravages, but with such study it is, in most cases, quite possible to devise means of deliverance; usually much easier than it is to persuade farmers to avail themselves of such means. Much has already been done in the investigation of such subjects; indeed, it is scarcely too much to say that if the farmer will take the pains to acquaint himself with what has been discovered, he need be at no loss for very effectual means of avoiding to a great extent the ravages of all his insect enemies. In this, as in many subjects connected with agriculture, however, it is unfortunate that the farmer is liable to be seduced by a variety of popular nostrums not based on real investigation of the facts, and that in the multitude of these the voices of true science and enlightened experience are lost. We trust that the essays prepared for competition will contain *accurate* summaries of the facts known respecting the

animals in question, and a thorough sifting of the real value of the remedies suggested, with their bearing on the general good practice of agriculture.

The whole subject of agricultural natural history is one of exceeding interest and value, whether we regard the creatures beneficial to agriculture or those injurious to it; and we have for some time meditated the preparation of a series of articles on these subjects for the winter numbers of this journal. We trust that we shall be able to carry this purpose into effect; and in the mean time we may notice, as a most worthy effort in this direction, the publication, by the Agricultural Society of New York, of a "First Report" on the Insects of that State, by Dr. Fitch, a copy of which we have recently received, and of which we shall avail ourselves in the contemplated articles referred to above. We may also quote the following remarks from the *Canadian Agriculturist* for August, with the reservation, however, that we somewhat differ from the writer as to the best remedies for the attacks of the midge, as we shall endeavour to explain in a future number:—

"We regret to find that this destructive insect (the wheat midge) is greatly extending its ravages in Upper Canada. In the Lake districts, or that part of the country bordering the Lakes and Niagara River, its ravages appear to have been most severe. It is much to be regretted that none of our Agricultural Organizations, from the Bureau of Agriculture down to the Township Societies—appear to think the subject of insect depredation worthy of their notice. At least we are not aware that any systematic plan for observing the numbers, orders or families, habits, times, and modes of propagation, territorial extent, destructive powers, parasites, &c., &c., of those insects that prey upon the farmer's crops, or for discovering the remedies that have been or may be employed to prevent their ravages, has yet been suggested or adopted by our Agricultural Boards or Societies. As a journalist we are left entirely to our own limited observation, to imperfect newspaper accounts, and the occasional remark of a correspondent who has found the "weevil," or "grub," or "worm," or "little yellow maggot" in his wheat, and wants to know where it came from, or how it can be got rid of. The subject is still further involved in doubt by the contradictory statements of wheat speculators—one party declaring that the "fly" has done immense injury; and the other, that it's all "a bugbear to keep up prices."

What could more properly engage the attention of of our Bureau and Boards of Agriculture than to collect and disseminate authentic information on a subject like this? The N. Y. State Agricultural Society, aided by a grant from the Legislature, have employed a distinguished entomologist, (A. Fitch, M.D.,) to examine and report upon the noxious, beneficial and other insects of the State. The results of that examination will no doubt benefit us as well as our neighbours, but there are facts peculiar to Canada that ought to be ascertained and made known. We trust a hint will be sufficient, and that next season systematic and extended observations will be made under the proper authority.

We have in previous volumes of the *Agriculturist* explained the habits and appearance of the Wheat *Midge*, and also of the *Weevil*. There is still, however, much confusion among writers and correspondents in regard to names, and this is another reason for such an examination of the subject as we have hinted at. The insect generally spoken of at present as preying upon the wheat in the ear, is the *Midge*, or Wheat Gnat (*Cecidomyia Tritici*). It is found in the kernels of wheat in its chrysalis or pupa state, the egg having been deposited by the parent fly upon the ears while the grain was yet soft or milky. There is a very wide distinction between this insect and the Weevil, (*Calandra granaria*). The former is of the *dipterous*, the latter of the *coleopterous* order. The true weevil preys upon the grain after it is harvested and when stored in mills, &c. The larvæ of the Midge is most destructive while the grain is yet soft in the ear. Indeed it is said that it cannot eat through the skin of the ripened grain, and therefore is not to be dreaded in the granary.

Remedies.—To the wheat-grower the most interesting part of the subject is how to prevent the depredations of this insect. We believe no perfect remedy has yet been discovered, but so far as we can gather from the experiments and observations of others, as well as our own, we recommend *early sowing* and *early varieties*. We made a tolerably close inspection of our own fields this season, in which both the Hessian Fly and Midge were found, and the result confirmed the wisdom of the above advice. In a field of blue stem, sowed 12th Sept. on a warm clay loam, summer fallowed and manured, we found the Midge in about every fifth ear, and from one to three kernels affected. In a field of Red-chaff, sown a fortnight later and after a crop of peas, on good soil, not manured, four out of every five heads were affected, and from two to six grains in each. A strip of this field was blue-stem, sown at the same time as the red-chaff, and was less affected than the latter, though there was no preceptible difference in the time of ripening.

Fall ploughing wheat stubble has been recommended, and if it were generally practiced, would no doubt, *with* early sowing, prove nearly, if not entirely successful, An experiment which ought to be repeated in several localities this fall, was made last year by an intelligen gentleman in one of the Western States. We cut out his statement for insertion in this number, but it has been unfortunately mislaid. The experiment, however, was as follows:—He made two square boxes of wood, of equal size, and placed them in his wheat stubble. Under one the ground was spaded and inverted to the ordinary depth; the other was placed on the stubble undisturbed. Both were covered with milinet (a kind of gauze,) which allowed heat and moisture to penetrate but prevented the fly from escaping. He kept a close watch during June and July, and found that the Fly or Midge appeared in the unspaded box from two to three weeks earlier than in the other. This proved that turning the larvæ under ground in the fall retarded the appearance of the fly, and, combined with early sowing, shows the wheat-grower a method by which he can "get ahead" of his dreaded enemy. We mey revert to this subject in our next number. Its importauce no one will deny. To the farmers of Canada it is almost a question of life or death. A Committee of the N.Y. State Legislature reported that they had "full proof that a single insect (the Midge) last summer (1854) destroyed property to an amount exceeding *fifteen millions of dollars*" "in the State of New York alone."

We have no data from which to estimate our losses in Canada, but even at a guess we may set it down this year at two or three millions."

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Cheap Ice Houses.—*Messrs. Eds.*—In the Co. Gent. of 19th inst., E. H. Bedford inquires respecting "the most approved manner and material of building ice houses," &c. All of which is very plainly answered by the Editors. As far as my knowledge extends, I do not think there is one farmer in a thousand, that has an ice house. One reason why it is so, I suppose farmers generally are not aware of the convenience and luxury of a good supply of ice during our hot summers. Some farmers think it is very expensive building a suitable store-house and filling it with ice, and are therefore deterred from attempting it. But the above views are wrong. Having built and filled one the past winter, I will attempt a short description of it, and of the cutting, filling in, or packing, of the ice, hoping that the ease and cheapness of the thing may stimulate small farmers, like myself, to supply themselves with the luxury of ice during the warm season of the year.

At the east end of one of my barns I have a shed 30 ft. long, by ten ft. wide. This has been used for storing muck, saw dust, &c., for bedding my cattle when tied up in the hovels. The east side and north end are walled up to the plate of the building. In the north end of the shed, I fitted up last winter, a room for an ice house, eight feet square. The space outside of the room, next to the barn and on the south side of the room, is nine inches—the spaces on the

other sides next the walls, are a foot, or more. The spaces around the room were filled with damp, fresh tan, which soon froze solid.

About the first of February, a tavern-keeper, near me, cut the ice to fill his ice house. The ice he cut was about two feet thick; mostly frozen snow. (This is miserable, dingy stuff, unfit for filling an ice house.) A severe cold *snap* of weather immediately followed, and in three days time, the space from which the taverner's ice was taken, was frozen over to the depth of 9 inches. This ice was almost as hard as flint—clear as crystal, and as "pure as the snow that's bolted by the northern blast twice o'er." With a couple of suitable saws, and two men to assist, in less than one hour and a half, we cut and drew on to the ice, ready for loading upon the sled, two cords—used a straight edged plank as a guide to saw by—the strips were twenty inches wide—and seven feet in length. When packed of this length, it left a space between the ice and sides of the room, six inches wide, which was filled with saw dust; and 12 or 15 inches spread over the top. As yet, have only used a portion of the upper layer. I used snow between the several layers to fill up the interstices. In taking out the ice, find the snow nearly as dry and fresh as when put in.

From the present appearance, I shall have an ample supply through the summer, through the largèr the quantity stored, the better it keeps. If my ice does not keep through "dog days," as some old *fogies* predict, I can easily enlarge my room so as to ensure a supply.

The boards used, were *shaky hemlock*, worth but a trifle for any other purpose. I did not keep any account of the cost, but think the whole of the expense, (getting and packing the ice included,) did not exceed seven dollars; and for the future, I think my ice can be cut and stored at a cost of not more than one dollar per cord.

And now, friend Tucker, I actually feel provoked with myself, to think how much luke-warm water we have had to drink, how much soft, slushy butter we have eaten, and how short a time fresh meats could be kept in the summer season, all for lack of ice, when, with a little energy and forethought, all these, and many similar evils might have been avoided. And to conclude, wife says she does not see how good butter can be made this hot weather without ice. L. Bartlett. *June* 24, 1856.—*Country Gentleman.*

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Description of a Cheap Watering Cart.—The cart itself is a mere skeleton, the shafts being about 14 feet long. They are connected by a fore and hind bar, placed at such distance as will just admit the length of the cask, while the width between the shafts is suited to the diameter of it. The axle is bent downward to nearly a semicircle to receive the cask. A pair of common broad cart wheels are fitted to the axle. The cask is suspended on two straps of hoop-iron, the end of which are bolted to the shafts, and the same bolts pass also through the ends of two lighter straps which pass *over* and secure the cask firmly in its place.—The funnel or hopper is usually fixed on the top of the cask over the bung-hole, or it may be inserted therein by an attached pipe. The distributor may be made of copper, or wood. The bore should be about two inches, not less, and the length about seven feet, and slightly bent *with a uniform curvature.* The distributor may be attached to the cask by means of a stem of the same material and bore as the main tube, and should enter the end of the cask close to the lower chine.

A stop-cock is frequently put upon the stem to regulate the discharge; but for the entire setting off or on of the supply, the stem, opens into a small chamber inside the cask, which chamber is closed by a flap-valve heavily loaded. This valve, when closed, stops the discharge, and, when lifted, the fluid has a free passage to the distributor. The opening of the valve is effected by a small chain attached to the flap, rising to the top of the cask, where it passes over a small roller, and onward to the fore-part of the cart on the right side, where it hangs at hand for the carter to set off or on at pleasure.—*N. E. Farmer.*

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Hay Caps.—The importance of the hay crop, and the short time in which it is necessary to secure it, demand that every precaution should be taken to prevent delay or losses in harvesting it.

With the almost uniformly dry months of July and August, as we have had for three years past in this region, the haymaker may say, perhaps, that coverings for the protection of his hay-cocks are unnecessary. But there are sections of country every summer, where the "weather is catching," and large quantities of hay are ruined or much injured. After the grass has been made nearly ready for the barn, the loss is not that of the grass alone, but of the labor also that has been bestowed upon it, and which has now become a part of the value of the crop.

Besides, if there is a way to protect the partially made crop out of doors, it prevents many tons from being injured after being taken in. When the rain comes, the length of its duration is uncertain, and the farmer will often hurry in hay that is not sufficiently cured, and that will heat and become musty in the barn. And then there springs, both from the wetting and the moulding, a disappointment and uneasiness of feeling, that should be avoided, if it can be done without too expensive an outlay.

Again, in curing hay, it is sometimes absolutely necessary that it should remain out two or three nights, and there is too much risk without some protection of the cocks.

A simple, cheap, and thoroughly effectual remedy against losses by wetting hay, may be found by using sheeting a yard wide, and sewing two pieces two yards long, each, together; hem the edges; turn down the corner an inch, and then that turn another inch, and sew it down strong. This will form a loop, into which a strong twine must be placed. When the cap is thrown over the cock, thrust a pine pin about a foot long through the string at each corner, and up into the hay, which will keep the cap in place, unless the whole cock is overturned.

Your cap, made as above, will be two yards square, which will be sufficiently large to cover half or two-thirds the way down of a common cock; beyond this the rain will do no harm, as the water will not penetrate the hay.

Good firm sheeting, worth eight to nine cents a yard, will shed the rain from the hay through a storm of three or four days' continuance; and the caps will last a lifetime by taking good care of them when not in use.

Take a light nail cask and make a bail to it from part of a hoop, to keep and carry the pins in, and you are then provided with a remedy which will pay its cost in a single season of "catching weather."

Caps may be found ready for use at Nourse, Mason & Co.'s store, Quincy Hall.

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On Training Colts.—A correspondent, whose favor is published at length in our weekly paper, after describing the manner in which he spoilt a "noble gelding," by his efforts to break him, by "machinery and according to rule," thus gives his later and wiser method:

And now here goes the other side. I have raised and broke some half a dozen colts. Let me remark, I am not a horse dealer (having never yet traded horses in my life,) or a horse breeder, but a dairyman and woolgrower, and have since the first experiment invariably followed the course I am now about to describe,—and which has proved entirely successful. I have never taken much pains to gentle a colt while it follows the dam—that is for the first 4 months; and all attempts at catching it by my workmen are strictly forbidden. If it will come near you, of course treat it with gentleness. The reason I do not allow it to be caught is this—I do not approve of meddling with any young animal till you have time to do it effectually, and this is not the case on my farm at the period before weaning. At the time of weaning, the colt is shut up in a roomy strong stable, and kept alone, with the best of treatment until its wild cravings for the dam are exhausted; a good halter of leather is placed on its head; and as a man is sufficiently strong to hold it, and as a short time answers to learn the lesson, he is quickly taught. Sometimes, if very stubborn it may be well to tie him to a post and leave him alone for half a day or even longer, when at the return of his groom he will manifest an absolute pleasure, and suffer himself to be led at will. As winter

approaches, it is provided with a warm dry stall, not on the naked floor by any means, where he is tied by the halter, and led to and from the brook, and as much more as you please, and allowed to run at large in fine weather, and fed with a small daily allowance of oats and plenty of good hay during the first winter. In spring he is turned to pasture, and the second winter the range of the shed and coarse hay, straw, or the litter of the sheep-rack, makes up his fare, and until the winter before the colt is 3 years old, or as much older as you please; but when we are ready to break a colt, we place the halter on his head, which he has not, and never will forget, and then place him in a strong harness along with an old, strong, steady and true horse, and drive on the road far enough to weary it, say six or eight miles, or go on about your work on the farm. The loads must in all cases be such as the old horse can move with ease, and the colt along with it if necessary, and if you back, the old horse must do the backing also. I have found in all the colts I have broken, that they will learn the bit and rein as soon as the collar and breach.

I have broken two of a race that are said to be almost universally vicious, and I have never used a bitting harness at all save in the first instance, and never a whip but once since, and that in a case of obstinate stubborness in a youug colt of eight months, which could not be induced to move at all in the halter; and in this case a lesson of a short hour proved sufficient to remove objections to such a degree that it followed me readily into the kitchen, to the astonishment of all within. This was one of the vicious ones spoken of. I am now using on the farm as the principal team, a pair of colts not yet four years old; they are perfectly reliable, no whip being needed, and a careless observer would on seeing them work, never suspect they were so young. The only fear I have in the matter is that we shall work them too hard. One of these is of the race of intractables, and until it was tied in the stall and fed at the manger steadily for a long time, would on no account willingly suffer its nose to be handled, which made it unpleasant as it was with difficulty it could be haltered in the field. Kind treatment and patience have conquered, and its disposition is so far modified as to be almost if not quite affectionate. How do you like this picture?

This is my experience in training colts. Let others do as they may, as for myself I am satisfied with both sides. Of the first, I had quite enough, and the memory of that transaction is attended with painful feelings of remorse. Of the last, in all the colts that have passed through my hands, not one has yet come to maturity, but has proved itself first rate. I know several that have been trained by jockeys, and not one of these but must learn the uses of the harness ere they are fit for anything but the lighter pleasure carriages or sleighs. E. B H. *Berlin Centre, N. Y.—Cultivator.*

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Whitewashing Roofs.—About twenty years ago, we built a barn, and for the the want of better shingles, I used those made mostly of the sap wood of white pine; previous to laying of them, they were dipped into a large kettle of boiling hot white-wash, well salted, till well soaked, and laid on to the roof after being dried. Now after nineteen or twenty years, those shingles are apparently sound, and the roof tight; had they been applied without the antiseptic steep, they would probably have been rotten in five years, if they had shared the fate of those applied to some of my other buildings. The time that the shingles ought to continue in the white-wash, must be decided by further experience.

Another advantage beside the preservation of shingles is the fire-proof tendency of the salt combined with the white-wash, which we all know is a damper to fire.

S. Brown.

Wilmington, Feb. 28, 1856.
—*N. E. Farmer.*

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Improvement in Getting in Hay.—Nearly all large farmers use the mowing-machine and horse rake. In some sections the ropeing of hay is practiced, and when well understood a very great saving is made. For the benefit of those not understanding how the operation is performed, I will make a brief statement. After the hay has been raked into the winrow, let a hand pass along and straighten and turn the winrow over. The end of the winrow should be rolled up and pressed down by stamping on it. The rope is attached to the whiffletree of the off-horse; the team is then driven around the winrow, and the rope tied to the whiffletree of the near horse. The driver should lengthen his lines so as to enable him to stand on the back end of the winrow. The roper, with a strong fork which he holds bottom side up, places one foot on the rope, pressing it nearly to the ground, and reaches forward and slightly lifts the hay as the team advance. The rope will usually draw up too high when the winrow is first started. The team should be stopt and the rope put down, the roper keeping one foot on the rope, and the driver on the opposite side. After a suitable sized draught has been drawn together, the forward part of the hay is lifted to prevent it from rolling under, and the team is driven to the barn or stack.

In pitching, begin at the back end. The first forkful will start hard; the remainder will pitch better than in any other way I have ever pitched hay, each rakeful coming out in a snug forkful. At least three times the amount can be drawn in this way that can be drawn with the same number of hands on a wagon or cart. The rope for horses should be from 30 to 50 feet in length—for oxen, 60 to 70.—*Cultivator.*

Cultivation of Mangel Wurzel.—Every succeeding year the superior value of Mangel Wurtzel over most other feeding roots is more and more established, and the breadths appropriated to that crop increased, notwithstanding the great prejudices it had to encounter against its extension. There is much uncertainty in its origin; some botanists consider it a distinct species, and give it the name of the *Beta altissima*, while others regard it only as a variety, giving it the name of *Beta vulgaris campestris;* and others, again, think it a hybrid between the common beet and the Sicilian beet, naming it the *Beta Hybrida*. Be this as it may, the plant under consideration seems first to have originated in Germany; at least it has been first brought under the notice of modern agriculturists there, and for several years extensively cultivated in Germany and other parts of the Continent, long before its introduction into Great Britain. In Germany it got its name mangel wurtzel, or root of scarcity--the great properties of the plant being in the production of an abundance when other roots fail—giving plenty in times of scarcity. The earliest notice of its introduction into these countries that we have been able to lay hands upon is in 1786, when a packet of seeds was sent from Metz by Thomas B. Parkyns, Esq., to Sir Richard Jebb, and presented by the latter to the Society for Encouragement of Arts, some of which passed into the hands of the celebrated Dr. Lettsome, who cultivated it and zealously recommended its extension. It was brought to Ireland by the end of the last or very early in the present century, when it was cultivated by many noblemen and gentlmen as an agricultural plant. In 1816, we find it was successfully introduced into St. Helena, where it grew in its greatest perfection, two roots being sent to England by General Bateson, which weighed each 56lbs. The crops obtained there were enormous, being at the rate of 66½ tons per acre, when manured with pig dung, and 77¾ tons per statute acre when manured with that of sea fowls, but without manure the produce was but 19½ tons per acre. These are highly instructive facts, and of great importance to the agriculturist, showing the great produce and profit in manuring for this crop with a liberal hand. This will be still more apparent from experiments made by the late Mr. Pusey in 1845, and reported in the Journal of the Royal Agricultural Society of England, vol. 6, page 529, to determine the most beneficial extent to which manure may be applied, and "what is the limit beyond which an increased quantity of manure ceases to act? Or, again, whether it be better to dress with dung only, or with a combination of dung and artificial manure? In order to investigate these and other points, I applied to 5 acres of yellow globe beet, in the first week of April, dressings per acre of various manures. At the end of October the roots were taken up, and the

produce ascertained by weighing the yield of half-an-acre, measured across the six sets of rows at the end. The following were the results obtained :—

	Tons.
26 loads of dung produced of clean roots per acre	28½
13 Do.	27½

"In four other experiments, to the soil manured with 18 loads (of dung) were added per acre,

	Tons.
7 cwt. of rape dust, produce,	27
14 bushels of bones,	26
7 cwt. of rags,	36
3 cwt. of guano,	36

"When these manures were used without the dung, then the produce per acre was found to be from—

	Tons.
7 cwt of rape,	20½
14 bushels of bones,	20
3 cwt. of guano,	20¼
The soil simple,	15½

By looking over the above, we find that 13 loads of dung produced nearly as heavy a crop as the 26 loads, and that the rags and bones, when added to the dung, produced in one case more and the other little less than 10 tons per acre, more than the dung alone, and that the bones and rape, when added to the dung, produced very little or no effect in increasing the crop. In the case of the guano this may be safely attributed to the salts they contain ; but as it is not stated whether the rags were woollen or cotton, we can form no opinion as to what their good effects may be attributed. Now, by the analysis of Professor Way (in the journal above quoted, vol. 6. p. 185), we find 100 parts of the ashes of yellow globe, and two varieties of the long red mangel contains as follows :—

	Yellow Globe.	Long Red, No. 1.	No. 2.
Silica	2.22	1.40	4.11
Phosphoric acid	4.49	1.65	3.11
Sulphuric acid	3.68	3.14	3.31
Carbonic acid	18.14	15.23	21.61
Lime	1.78	1.93	2.71
Magnesia	1.75	1.79	2.79
Peroxide of iron	0.74	0.52	0.56
Potash	23.84	21.68	29.05
Soda	19.08	3.13	19.05
Common salt,	24.54	49.51	14.18

It will be observed by the above that potash, soda, and common salt enter largely into the composition of the mangel wurzel, and should as largely form a portion of the manures applied in the production of that crop.

Mangel wurzel is suited for a greater range of soils than most other plants, if well pulverised, and manured ; though producing best on a deep, rich, friable loam ; deep cultivation is, therefore, with a free use of lime and salt, well worked into the soil, absolutely necessary in the cultivation of this crop. Putrescent manure, in a sufficient state of decomposition, should be liberally supplied ; and of the principal articial manures, (superphosphate and guano), the latter, from general experience, seems best adapted to produce a vigorous and abundant crop ; the surface should be rendered very fine, and the drill, after being formed, should be flattened by the roller. The seeds should be sown by the end of April, or very early in May. It is a great advantage to steep the seeds in soft water 48 hours before sowing, giving them an inch of fine close cover, and rolling after, to keep out drought. The distance between the drills should not be less than 28 inches, to admit of perfect horse-hoeing and grubbing, and the plants singled out to 12, 15, or 18 inches apart, according as the land is more or less rich, or sheltered. Starting prematurely to seed is to be attributed more to the plants being left too thick, and the want of timely thinning, than anything else, and should be avoided. As a nutritious feeding plant, there are few that can compete with the mangel wurzel, particularly in the latter end of the season, and the crop deserves a large breadth in the proportion of land laid apart for green crops.—*Irish Farmer's Gazette.*

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MADDER.—*(Rubia Tinctorum.)*—It has been ascertained of late that this plant is susceptible of cultivation in this country, though the very large quantity of it annually consumed in our clothing establishments, and dye-houses, is imported. The plant has a perennial root and an annual stalk, and those who have carefully investigated it with reference to its habits, say that it does best is a deep, rich, sand loam, moist, but not wet. It requires three summers to come to perfection ; and as the roots strike deep, the ground should be plowed and mellowed two feet deep for its reception. Miller says it should be planted with a dibble (it is propagated by off-sets from the old roots,) in rows from two to three feet apart ; while Bechstein says they should be planted only six inches asunder. The practice in this country, we believe, for we are not personally familiar with it, is to plant in rows four to five feet apart, and to cultivate rows of corn or potatoes between them, at least the first year. The season for planting is the last of May or first of June. The acre produces, as things are favorable or unfavorable, from ten to twenty hundred pounds.

Hitherto, it has been cultivated principally in Holland ; the province of Zealand, according to a late traveller, being almost covered with it, and from whence it is exported to every part of England and America, "yielding almost incalculable profit."

Several years since it was stated that the imports of madder for the use of our own manufactures amounted, annually, to more than two millions of dollars ! There is no reason, as it appears to us, why our farmers should not succeed as well in the cultivation of this important and valuable product, as the Hollanders, and thus avail themselves of a new resource, and an amount of income which would be of great benefit, not only in its effects upon their own interests, individually, but upon the interests of the country at large.

Successful experiments have already been made in Otsego and Madison counties, New York, and very favorable results are anticipated by those who have commenced the business of growing it, as a field crop, in other parts.

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GARGET, OR INFLAMED UDDER.—The town in which we reside, as well as most of the towns in the vicinity, is strictly an agricultural town, and the attention of farmers has been turned for several years to raising milk for the Boston and other markets in that neighbourhood. Of course, cows command a high price, the best are eagerly sought for, even into the States of Maine, New Hampshire and Vermont, and the skill of the producer is taxed to ascertain the best modes of feeding and sheltering, in order to produce the largest quantity of milk. Large sums are annually expended for oil and rice meal, corn meal and shorts, in addition to the best hay usually fed to them. On some farms, roots are raised in abundance and fed out, and care is taken of every kind to get as large a flow of milk as possible.

These cows run in pastures in summer, and are kept in clean and well ventilated stables in winter ; they are carded, fed and watered regularly, appear healthy, and have nothing to do but chew the cud of quiet contentment, and daily replenish the farmer's pails in return for his bounty and care. But under this systematic attention, the disease which we have named at the head of this article, often materially reduces the profits of the business. Various remedies have been resorted to, but have generally failed to produce any beneficial results. The present loss of milk is not all, for the cow affected does not always so entirely recover as not to have her value depreciated, and sometimes permanent defects are established.

A neighbour purchased a fine looking cow a few weeks since, for which he paid fifty dollars. For a week after getting her home, she yielded a good supply of milk, ate well, and promised to be all he expected. At this period, her bag began to swell, appearing to have hard lumps in it, and followed by a flow of bloody milk from one of the teats. The inflamation and hardness increased, until the cow lost appetite, and was altogether in a bad way. The gentleman then had reference to the bound volumes of the *N. E. Farmer* for a remedy, and in volume 5, page 496, he found a remedy communicated by Mr. Minot Pratt, of Concord, Mass., a very intelligent and carefully observing man. It is the use of *Aconite*, given by soaking a piece of bread in water where three or four drops of *Aconite* have been infused. He says he has never failed to cure when he has administered it. It was given in this new case, and with excellent results.

In vol. 7, page 336, we have extracted liberally on this subject from Youatt and Martin. They recommend a wash in *Arnica* water, when the udder has received an

external injury; but Aconite, if occasioned by a cold. See the article.

A small phial of the *Aconite* in solution, costing but ten cents, would be sufficient for any farm for a year; it is easily administered and, in our opinion, is the remedy which should be used in the disease of which we have been speaking.

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The Guano Islands of Peru.

The following account of these islands from the *New York Evening Post* is interesting, though we believe some facts are over-strained, and the writer is probably wrong in his theoretical views as to the origin of the manure.

An intelligent gentleman, who has been employed in loading a ship with guano at the Chincha Islands, on the coast of Peru, has communicated to us some interesting information with respect to the trade. He has been at the islands three different times, and nearly six months in all. The last time he was there was in the fall and summer of 1855. He says that he found at times five hundred sail of vessels together, loading with guano, generally large ships. One ship was 4,500 tons burden. Not less than three hundred sail of vessels are now at the islands, loading for the United States, Spain, Portugal, France, and English and German ports. Some cargoes are sent to Constantinople and some to Russian ports in the Black Sea. This was before the war in the Crimea. The Russian trade will now open again, both from the Black Sea and the Baltic. Freights are high; £6 10s., are often paid per ton for Liverpool and Hampton Roads. Generally ten shillings more a ton freight is paid to Europe. At the rate at which guano is now shipped from the Chincha Islands, it will be exhausted in six to eight years—not a ton will be left. Twenty thousand tons are sometimes removed from the islands in a single day.

These islands are about one hundred miles north from Callao. The longest of the group is two miles in length and a quarter of a mile wide, but contains only a small quantity of guano. The most northerly island is the smallest, being about a mile in length by half a mile in breadth. Guano on this island is two hundred and fifty feet deep. The island contains a Chinese settlement of Coolies, about a thousand in number, who are employed in digging guano and loading the vessels. A task is giving them each day, and if the gang fail to get out the given number of waggon loads, of two tons each, a day, their bondage is continued a longer period to make it up; so many months or days being added as wagon loads are wanting.

The Coolies are cheated into the belief that they are to be shipped from China to California and the gold diggings, and are further deceived by the offer of a free passage. The knowing Chinese or the Mandarins, ship them. The ship-master carries them to the Peruvian coast, and sells the cargo of living Chinese to the Peruvian government for his freight money. All this time the Chinamen are kept in irons and confined below in the ship. The Peruvian government purchase the cargo of living Coolies, paying the Yankee or English captain a round sum for his care, dilgence and labor in stealing Chinamen from their homes to be sent into the *guano* mines of Peru for life, or for five to seven years, and to be held in bondage or peonage to pay their passage to the glorious land of the *Meas*.

The guano is hard, and can only be broken up with the pickaxe. It is then broken and shoveled into the wagons, and rolled from the shutes into the vessels.

No person can go upon or come away from the islands without a pass, as they are guarded by more than one hundred armed soldiers belonging to Peru.

The Peruvians send all their prisoners of state into the guano mines, say about two to three hundred, where they are let out to work by day, and at night are shut up in their cells, with only two meals per day. These prisoners are generally provided with wives or female companions, who have been permitted to go to the island, and hire themselves out for work and prostitution. They are mostly Indians, natives of the country. There is no fresh water on the islands, and each vessel is compelled by law to carry a ton of fresh water there for every hundred tons burden of the ship. The oldest captain in the fleet from each nation is appointed Commodore, and hoists his flag as such on his ship, where all disputes are settled. Indeed the municipal laws of the islands and he fleet are decidedly of Yankee origin.

The islands are about ten miles from the main land, and are composed of new red sandstone. The guano is not all bird dung, but is largely composed of the mud of the ocean; that brought from Peru, is so, at least. When anchors are hoisted into the ship from the holding grounds of vessels along the Peruvian coasts, large quantities of mud, of a greenish white color, are brought up, and this mud, when dried, makes guano equally good with the guano taken from the islands.

The birds and seals come upon the island when the people are not at work, but it does not appear that their dung or decayed bodies are more than a foot deep on any of the islands. Fish are taken in great abundance about these islands, as are also seals, which come there in large schools. Sea lions also abound. The composition taken from the islands, called guano, is stratified, and lies in the same form it did before it was lifted up from the bottom of the ocean.

Our informant says that a geological examination of the islands will satisfy any man that the guano ships are bringing away from these islands a very different thing from the dung of birds or decomposed animals.

Gibbs & Bright, of Liverpool, have a lease of the Guano Island from the Peruvian government for five years, which expires in 1857, but hope to get their lease renewed. This house pays the Peruvian government about $4.50 a ton for the privilege of taking all the guano from the islands, the government furnishing the men to dig the guano.

The ships that load at the islands are mostly ships chartered to carry a cargo, or are sent there by the owners to take away a cargo, bought of Gibbs & Bright, who have the entire monopoly of the trade.

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Culture of the Mangold Wurzel.

Editors of the Country Gentleman.—I notice in your paper of the 3rd inst., an inquiry on the best method of raising Mangold Wurzel. I give you my system of growing them, which I have practiced both here and in England. I have grown them every year for stock, as I consider them better for that purpose than either carrots or ruta bagas, and as they are a crop you can always count on, as they are not subject to disease nor the attacks of insects, and keep later in the spring than Swedes. They can be grown in this country with as good success as in England if the same attention is paid them here as there, which I have no doubt will be done when their proper value is known by our farmers, for their stock, horn cattle, sheep and hogs.

To insure a good crop, get your ground into good tilth by first plowing and subsoiling. Then cart out your manure, barn-yard or a good compost heap. It must be well rotted, what we call spit manure, that is, manure you can dig with a spade. As to quantity, dump it cart thick, that is the length of your horse and cart from heap to heap. If you have applied this quantity of manure to any of your last year's crops, use that ground this year for mangolds, as it does not like fresh manure so well. When your manure is plowed in, give it a good harrowing. Then roll the ground. Then take coarse salt and give your ground a sowing of that, throwing it on as thick as you sow oats. Harrow and roll again. If your ground is not fine by that, repeat your harrowing and rolling. Get your ground in good condition, and you are sure of a crop. If your ground was manured last year with barn-yard manure, use this year two hundred weight of No. 1 guano, or three hundred of superphosphate of lime; mix either with four or five times its bulk of dry mould—apply it broadcast and harrow it in. Pounded bones (fine) will be a good addition to the above.

I would recommend to beginners to use superphosphate of lime as by it there is no danger of destroying your crop. With guano there is danger in inexperienced hands. Try a row or two with guano, and learn to use it by experience. Guano is our best special manure, but unfortunately it has got a bad name through people not using it with proper care. They then blame the guano instead of blaming their own want of judgment in applying it.

Ground that has been worked three or four years, is best for mangolds. They will not do as they should do on a sod. You can raise to advantage three crops of mangolds on the same ground. A level piece of ground is best. They will not do on a hill. Time of sowing from 1st to middle of May. Prepare your seed by soaking in warm water that you can bear your hand in, forty-eight hours. Then let it remain in your last cooling of water 48 hours longer or more. Then dry it in wood

ashes, plaster or any thing that will dry it. Then sift it through a fine sieve to let the ashes off. Don't be afraid of soaking too long. I have let it remain after soaking until it began to sprout. The seed is so hard that if not soaked previous to sowing, it lays a long time in the ground before it germinates, and the weeds get the start of you, which, to grow mangold well, must not be allowed. Keep your ground clean and your crop will pay you. As to the manner of sowing your seed, that depends on circumstances. If you can get boys, they are the cheapest. Have a line the length or half the length of your ground, and a measure the width you intend to have your rows. Set the line tight; then shove one foot along the line which makes a good mark; then your boys follow and set the seed one-fourth or half an inch deep, twelve inches apart and two seeds in each hole. They can use their fingers or a small dibbler; or set the seed six inches apart and one seed in each hole. After they are up thin to twelve inches apart. The distance apart of your rows depends on how you intend to cultivate them. If by the hand-hoe eighteen inches apart; if by the cultivator (horse) 2½ or three feet apart.

Another way you can mark out your rows: take a narrow piece of board and put a handle to it like a rake; put pegs in it the distance you intend your rows to be apart; set your line for one row and draw by it; then in your outside row set your last tooth and draw to the bottom, and so on all through. You can also sow your seed with a sowing machine. Regulate your plates and quantity of seed on a floor or level piece of ground. You cannot sow so regularly by it as with the hands, neither do I think there is any economy in it when you can get boys. You use treble the amount of seed, and when the plants are up it takes much longer time to thin them than it does when planted by hand, and they are not so regular in coming. Two pounds of seed will sow an acre by hand, whereas by machine it requires six pounds.

If you have any vacancies you can transplant from where they are thick, and they will do as well as the others not transplanted. You must get the whole of the root in length; if the point breaks off in lifting it, throw it away; it won't make a root. In lifting, use a dibbler; shove it down half an inch from the plant, then pull to you gently, then take hold of your plant and pull gently, and you get your plant fit for planting. I have sowed mangold in a bed and then transplanted like cabbage.

When I use a machine I drill in guano or superphosphate of lime with the seed.

In cleaning them, keep the mould from them; if you have any hill let it be in the center of your row.

The sorts I always grow, are the Long Red and Orange Globe. The latter keeps longer and does better on some ground than the Long Red.

I commence to store them the latter end of Oct. or 1st. Nov.—as the weather favours. I let them stop out as long as I can. I commence a few days before I intend to pull the roots, to strip the leaves off, and feed them to the cattle, so that the cattle use up all the leaves. Just notice your cattle's eye when they get a taste of them, and you will see how they like them—also notice your milk-pail and milking before you use them, and see the difference there will be in the quantity of your milk, and when they are all eat I think you will say, I wish I had more of those leaves. Set a man to pull your roots, and a cart or wagon along; as they pull them, throw into the cart. Take them close to your cow house and pit them. Lay them four feet wide, with the outside row bottom to top with top out, roots in. Build 4 feet high, tapering so that you finish with two at the top. Then lay a coating of straw against them six or eight inches thick; then put your mould a foot or fifteen inches thick against that. When nearly headed, lay a board along the top (to keep rain out) for a few days. This allows them to heat, and the moisture to pass off. When finishing, put about half a bundle of straw about twelve feet apart, along the top. This lets all heat that may rise pass off. I build my pits north and south, so that the south is easily opened and the north side stand. Care must be taken in removing, that a knife is not used in stripping the leaves. If they are cut, they bleed and rot. Pull the leaves down. I store ruta bagas and carrots in the same way. I am now using roots I put up last fall as above, and have not as yet met a bad one. If you put them in a cellar, cover them with coarse hay or straw to exclude air and light, as these make them shrivel.

If you wish, I shall give you my system of feeding to milk cows, and for fattening, both of which I use roots for to advantage. H. *Newton, New Jersey.*

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Corn for Fodder.

There being at present quite an interest evinced among the farmers throughout the country respecting the merits of Indian corn as a fodder crop, I propose making a brief statement of an experiment made by myself in its culture, not because I conceive that I have achieved a thing worthy of note, but rather, (which is less common,) to point out errors of culture, and at the same to yield an approval to the system, as being a good and profitable one.

The soil, some five acres of old meadow sod, was turned over during the first day of June, in a fair but not superior manner. The land descends towards the east, soil varying from a dry clayey loam to a low and rather wet muck—subsoil a clay hard-pan, and the whole quite thickly interspersed with rubble stone. Upon this field, passably well prepared, I sowed broadcast at the rate of about 3 bushel per acre, of yellow 8 and 10 rowed corn, and covered with the harrow. On account of a grievous scarcity of labor, and the pressure of other matters, the harrowing was not as thoroughly performed as it should have been, and the next rain, (which by the way was a tempest,) left much of the seed uncovered.

Immediately succeeding this storm came a lengthy drouth, and of its effects I purpose to tell. Upon the dry and loamy portion of the field, much of the seed failed to vegetate, and as a consequence the stand was thin, and some weeds grew among the corn. Also in some low places, where the water collected and saturated the soil for too great a length of time, the same result obtained, save that the stalks were somewhat shorter than upon the loam. As a large portion of the field was springy and the crops usually much injured by surplus water, I had opened a large ditch lengthwise through the center of the low ground, which ditch however, proved far from sufficient to effect a thorough drainage of the field. Upon the muck drained by the ditch, the growth of corn was almost gigantic, though very thick upon the ground; indeed it was a perfect wildnerness through which it was almost impossible to force a way. In this, as in other crops, I find drouth powerless for harm, upon a well-drained soil; and in this instance, the increased product would nearly have repaid the whole cost of thoroughly draining the whole field, had it been possible to procure the requisite labor; but in this vicinity that is the scarcest article in market.

Of this fodder, a small portion was fed green, during the August and September drouth. It was relished by my stock, (horses, oxen and milch cows,) and supplied in a most satisfactory manner the deficiencies of a dry and sun-scorched pasture, and kept up without diminution the flow of milk.

I allowed the bulk of the crop to stand until the lower blades began to wither and show 'the sere and yellow leaf,' when I proceeded to the harvest, and *then* came the tug of war. My men being unacquainted with the peculiarities of a crop of fodder corn, were sanguine of success with the craddle, but after wrecking one and badly injuring another, they sagely concluded that a cradle was not the tool with which to harvest an 8 feet growth of fodder corn, though the stalks were ever so slim; and where shorter, their weight and the tangling of the blades rendered the attempt hopeless. I then set them at work with English grass hooks, which performed the work satisfactorily, albeit somewhat tediously. The stalks were bound in rather small bundles and set up in stooks; and as they require to stand quite a length of time, I here remark that the operation cannot be too thoroughly performed. The stooks should be rather large, and well bound with *straw*. *Stalks* will not answer, as they are apt to break, and let the whole fabric fall to the ground.

A portion of my stooks were originally put up small and after being partially cured were united, 2 or 3 being made into one. This is the best method of management, as the time required is but a trifle, and the ends of thorough curing and security from injury, are both attained thereby. After the stooks have been united, they can remain until a convenient time for storing, which can be done in various manners, and as I am relating my experience, I shall not spare my failures. I drew a portion of my fodder to the yard and stacked it, placing 4 and 5 large loads in a stack, thus making (as I soon learned in a most convincing manner,) my stacks too large. The stalks soon generated heat and began to smoke at a fearful rate, whereupon I speedily took them down and set them out too cool, and then put them up in small stacks with a net work of rails under the bottom, to keep them from the ground, and admit the air. After this they gave me no more trouble. Another portion of the fodder I drew to my barn, and stored about in different places upon the scaffoldings. This last, (when the farmer has plenty of scaffolding,) I think to be the best and safest method of storing.

I have since learned that the correct mode of stacking corn-fodder, is to obtain a rather bushy sapling, cut off the limbs, leaving their stubs a few inches in length, and plant the pole thus prepared firmly in the ground; next throw some bits of rails, &c., about its base, to keep the fodder from the ground, and you are ready to commence the stack. Build the same carefully and in a circular form, with

the butts of the stalks out, and allowing the tops to pass a little by the pole in the center; twist these tops occasionally about the pole, so that when the stack settles the center will retain its position, and thus leave the whole affair in condition to shed off the storm. A stack thus built will preserve the fodder in the brightest and best possible condition, and as it will be small, it can be fed out in the winter without receiving injury from the storms while open.

I am unable to state the precise amount of dry fodder yielded per acre, but should think it to be about 5 tons. Suffice it to say that the return was satisfactory, furnishing as it did, by far the larger portion of food for the sustenance of a considerable stock through the winter, and furnishing it too at a cost far below that of an equal amount of hay.

I can safely premise that of all the readers of the *Country Gentleman* who wish to secure themselves against the effects of drouth, and the consequent failures of the hay crop, not one will have cause to regret the provision of a liberal stock of corn-fodder, to guard against unforeseen casualities.

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RESTORING THE DROWNED.—The great number of deaths from drowning which take place at this season, will give interest to the following new rules for the treatment of persons rescued from the water. They are by Dr. Marshall, of London, perhaps the most distinguished physiologist of the present day, who has investigated the subject of drowning, and established new principles of treatment. He condemns the rules proposed and practiced by the Royal Humane Society, and substitutes the following for the treatment of asphyxia from drowning.

I. Send with all speed for medical aid, for articles of clothing, blankets, &c.

II. Treat the patient on the spot, in the open air, exposing the face and chest freely to the breeze, except in too cold weather.

I. To Excite Respiration.

III. Place the patient gently on the face—to allow any fluids to flow from the mouth.

IV. Then raise the patient into the sitting posture, and endeavour to excite respiration.

1. By snuff, hartshorn, &c., applied to the nostrils;

2. By irritating the throat, by a feather or the finger;

3. By dashing hot and cold water *alternately* on the face and chest.

If there be no success, lose no time, but

II. To Imitate Respiration.

V. Replace the patient on his face, his arms under his head, that the tongue may fall *forward*, and leave the entrance into the windpipe free, and that any fluids may flow out of the mouth; then

1. Turn the body gradually but completely on the *side and a little more* and then again on the face, alternately (to induce inspiration and expiration;)

2. When replaced, apply pressure along the back and ribs, and then remove it (to induce further expiration and inspiration,) and proceed as before;

3. Let these measures be repeated gently, deliberately, but efficiently and perseveringly, *sixteen times* in the minute only.

III. To Induce Circulation & Warmth.

1. *Continuing* these measures, rub all the limbs and the trunk *upwards* with the warm hands, making *firm pressures* energetically;

2. Replace the wet clothes by such other coverings, &c., as can be procured.

IV. Omit the Warm Bath until Respiration be re-established.

To recapitulate—observe that

1. If there be one fact more self-evident than another, it is that artificial respiration is the *sine qua non* in the treatment of asphyxia, apnoa, or suspended respiration.

2. If there be one more fact established in physiology than another, it is, that within just limits a *low* temperature conduces to the protraction of life, in cases of suspended respiration, and that a more elevated temperature destroys life.

3. Now the only mode of inducing efficient *respiration* artificially, at all times and under all circumstances, by the hands alone, is that of postural manœuvres described above.

This measure must be adopted.

4. The next measure is, to restore the circulation and warmth by means of pressure firmly and simultaneously applied in the course of the veins, therefore, *upwards*.

5. And the measure *not to be adopted*, because it tends to extinguish life, is the warm bath *without* artificial respiration.

The measure must be relinquished.

These conclusions are at once the conclusions of common sense and of physiological experiment. On these views human life may, nay, must sometimes depend.

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MERCY TO THE BEE.—TO STUPEFY BY CHLOROFORM.—The necessary dose is a quarter of an ounce, or two tea-spoonsful, poured into a piece of rag doubled twice, and placed on the floor-board of the hive, which must be lifted up for the purpose, the entrance-hole being carefully secured. In about two minutes and a half there will be a loud humming, which lasts about one minute, when all is quiet. Let the hive remain in this state for six or seven minutes longer, making altogether about ten minutes. Remove the hive, and you will find the greater part of the bees lying senseless on the board. There will still be a few clinging between combs, some of which may be brushed out with a feather. They return to animation in from half an hour to one hour after the operation. The expense is three pence per hive. This plan possesses a great superiority over the usual mode of brimstoning, as the bees are none of them killed; and over the more modern plan of fumigation by fungus or puff ball, inasmuch as it is far less trouble, and the flavour of the honey is not injured, as in the latter case, by the fumes.—*Bee-keeping for the many.*

THE BASKET WILLOW.—*Messrs. Editors.*—In the fiscal year ending June 30th, 1855, there was imported into the United States, $132,658 worth of foreign manufactured willow wares, such as baskets, cradles, childrens' carriages, &c.; also $45,459 worth of the raw or unmanufactured willow, making, in the aggregate, the round sum of $178,117.

How far it may be for the interests of this country to grow its own willow, and manufacture its own supply, are questions in political economy that should be fairly and candidly discussed. The subject has excited considerable enquiry of late years, and much has been published in the agricultural journals upon the subject. Many persons have written upon the willow culture, who, doubtless, were not well posted up in the matter.

The best essay I have read upon the subject, was written by John Fleming, Esq., of Sherburn, Mass., published in the Transactions of the Ag. Society, Norfolk Co., Mass., 1852. Mr. Fleming is largely interested in the culture and manufacture of the basket willow, and is familiar with the subject in all its branches. The length of the essay must preclude the republication of it in this paper. At the time Mr. Fleming wrote his essay, he was about publishing a "Treatise on the Culture and Harvesting of Basket Willow," which it is presumed he has done, although I have not seen any notice of it. If published, I think it would be well for all to obtain a copy of the work before entering largely into the culture of the willow. If the work has not been published, I would refer them to his Norfolk Co. essay.

In the year 1845 Mr. F. commenced, and is now connected with the largest willow-ware manufactory in the United States. They purchase and work up more willow than any other persons or company in these States, and have, therefore, had an excellent opportunity to learn what is the best willow used in this country, and what is the prospect both for the cultivator and consumer of the article. Mr. F. says:

"For more than twenty years I have been engaged in cultivating willow, in preparing it for use, and in manufacturing it into ware. Of this time, about eight years have been devoted to improvements in the culture and manufacture of it in America. Previously I lived in my native country, England. The result of my experiments there and here, and the knowledge I have had of my father and my grandfather, in the same business for at least fifty years, I consider sufficient to justify me in saying that I fear no contradiction to the statements I have now made, nor any taunting remarks from the importers of foreign willow.

"The importer of foreign willow has said, repeatedly, that the plant *cannot be grown here to perfection*. But I can show him the living willow, that is preferred by the best workmen in this country, and which brings the highest price paid in the market."

We can grow the best of Indian corn in this country, and a profit too; but in order to do this, the farmer must select for it a congenial soil, and well understand and practice the right culture in order to produce the desired result. Just so in regard to the successful and profitable culture of the basket willow. L. BARTLETT, *Warner, N. H.*

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GATHERING CLOVER SEED.—A writer in the *Valley Farmer* gives the following method of collecting clover heads:—"We once made and used for many years, a very simple machine for gathering clover heads, with which a man and horse can go over and gather the seed from double the quantity of land in a day than he can cut over with a scythe; and when the heads only are gathered, they require no other labour, except drying, to prepare them to run through the hulling and cleaning machine. Any tolerable workman can make one of these machines in two days. It is upon the following plan:—Make an ordinary sled with sides or runners 14 inches wide and 6 feet 6 inches long. These may be placed 5 or 6 feet apart, and secured together with two cross pieces only at the back end, leaving the forward part open to the length of 3½ or 4 feet; then a box is made to nearly fill the width between the runners. The box is 4 feet long and 15 inches deep, with the forward end open. To the cross pieces at the bottom of the box, at the forward end, teeth of hard wood are secured so as to project about 12 inches; they should be three-fourths of an inch thick and one inch wide on the top, and made a quarter of an inch narrower or bevelling on the underside. These teeth are placed *three-sixteenths* of an inch apart, so as to form a comb. If the upper side of the teeth were capped with hooped-iron, neatly fitted, it would be better. This box is hung between the sides of the sled upon two gudgeons or pins two inches in diameter, just as cannon is hung in its carriage. With two handles, four feet long, secured to the box and projecting behind, the box may be moved on the pins so as to lower or raise the teeth to adapt them to clover of any height. A man with a horse can strip the heads from four or five acres of clover in a day with this machine, and collect it in the box. With one of these machines a farmer can gather as much seed in a day as would be required to seed forty or fifty acres. It needs no hulling or cleaning unless it is designed for market. Some prefer to sow the seed in the chaff to that which is cleaned.

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FALL PLOWING.—The advantages of Fall Plowing may be enumerated as follows:

1. In autumn, the team having become inured to work through the summer, is more vigorous and better prepared for labour than in the spring, and other farm work is less pressing in its demands upon the time and attention than in that bustling period. Let all the plowing be done which is possible in the fall, and still the spring work would give abundant employment to the farmer and his teams, in drawing manure, cross-plowing, cultivating, harrowing, &c.

2. In the fall, low, moist lands are generally in better condition for plowing than in spring time. We say generally, for this season low, moist lands are decidedly moist, at present. Still, we cannot hope for any better state very early next year, and if plowed as they should be, wet lands will suffer very little from water through the winter.

3. Stiff, heavy soils, plowed in autumn, undergo, by the action of water and frost, a more thorough disintegration—clays are pulverized and crumbled, and heavy loams and hard pan lands are acted upon in a like manner and with like benefit.

4. Heavy, coarse swards, full of rank weeds and grasses, can be better subdued by plowing in the fall—their roots are more apt to die out, and far less liable to sprout again than when plowed in the spring. The turf is better prepared, by its more advanced state of decay, for the use of the crops which may be sown or planted upon it.

5. Fall plowing disturbs the "winter arrangements" of numerous worms and insects, and must destroy a large number of these pests, and also their eggs and larvæ. This is a minor advantage, but one worthy of consideration, especially on lands infested with the wire-worm.

The principal objections to fall plowing are these:—

1. The loss of that fresh friable condition readily permeable to air and moisture, and the consolidation of the soil by long exposure to changing and stormy weather. This, on soils of a light character, is a very serious objection to plowing in autumn.

2. The loss of vegetable matter and the gases of the same while in a state of decay, is another disadvantage. The latter is but a small loss, if the work is done late in the fall, but often, on hill sides, a large part of the soluble and floating organic matter is washed away by the heavy rains of winter and early spring time. The soil is also consolidated by the same influences. Heavy swards thus situated would sustain less injury than light swards or stubble lands.

The advantages and disadvantages of this practice may be appropriately followed by brief directions for performing the work.

1. Do it in the best manner.

2. Throw up low lands in narrow beds and cut cross furrows and drains sufficient to carry off at once all surface of water. This will obviate one great objection to fall plowing.

3. Plow deep and narrow furrows—such will best secure the action of the ameliorating influences of frost upon the soil. A rough broken surface is better than a smooth one for this purpose.—*Rural New-Yorker.*

TRIALS TO DETERMINE THE VALUE OF DRAINING.—On several occasions within the last two or three years we have recommended to those of our readers who have lands seemingly in need of draining, that they should make one or more *experimental trials* of the effects of draining on a small scale, as one of the most satisfactory and economical modes by which they could acquire the information they needed, and be enabled to determine whether or not it would be expedient or profitable to undertake draining operations on a larger scale. We have recommended this course because it has appeared to be the one most likely to *convince* those unacquainted with draining, of the *reality* of the advantages which generally result from it. Draining operations being generally expensive, are not likely to be undertaken until *such a conviction* of their proving profitable, and, in every way, a good investment, has been firmly established in the mind. To produce a conviction of this kind, one experimental trial will, with many, go much farther than one hundred reports of the most beneficial results secured by the trials of others, beyond the reach of their personal observation.

We are induced once more to call attention to this subject, and to renew our recommendation to institute some experimental trials, partly in consequence of some trials which have been made in virtue of our suggestions, with encouraging results, both in the garden and on the farm, having lately come to our knowledge, and partly in consequence of our belief that such trials may be made very seasonably before wheat-sowing in September, on a few rods of some fields, or more conveniently at any time during the fall and early part of winter, than if postponed to the opening of spring. From the present time until the earth shall be closed up by frost, there may be several favorable opportunities of digging a few rods of drain for the purpose of experiment, the due employment of which is likely to lead to results of much importance. Especially would we recommend an experiment in draining a few rods of some field which is intended for wheat, in the course of a few weeks. If the subsoil should be a hard one, or the field from any other cause be subject to stagnant water a little under the surface, the few rods which might yet be underdrained, would show very decidedly in the course of the wheat-growing season, what advantages might be reasonably anticipated from a thorough draining of the whole field. There would be a difference between the drained portion and the rest of the field, sufficient to satisfy any one, in an ordinary season, that wheat will not grow as thriftly on a soil saturated every now and then with stagnant water, as on one made porous by a proper amount of thorough draining. The color and other appearances of the plants while growing, the filling of the heads, &c., would be so different, in all probability, on the drained and the undrained portions of the field, as to furnish data for instructive inferences, and especially for determining whether the expenditure necessary for draining the whole field would be a paying investment or otherwise.—*Country Gentlemen.*

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BEET STEAKS.—The beets, after being washed carefully, may be baked either whole like sweet potatoes, or in slices, and then served up hot with butter, pepper, &c., to the taste. There is a delicious flavour

in beets cooked in this way, which is lost when they are boiled. The best sort for this purpose, are Bassano, Waite's dwarf black, and turnip blood beet.—*Ohio Cultivator.*

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Reclaiming Bogs and Swamps.

The following article on this subject, from the pen of HENRY F. FRENCH, of New Hampshire, in reply to a correspondent of the *New England Farmer*, contains many excellent suggestions, and will be valuable to those who have swamp lands to reclaim. The rule given for the sides of the open ditches, at 45 degrees, makes these sides too steep—engineers allow a foot and a half horizontal measure for a foot rise, which is as steep as earth will remain without crumbling or sliding down. An open ditch a foot deep must be therefore three feet wide; one two foot deep, six feet wide, and in like proportion for any other depth. This shows the great waste of land occsioned by open drains, and the economy of under draining. —EDS. CO. GENT.

I have reclaimed several meadows, and have never yet attacked one that was not worth the experiment.

I have *heard* of swamps that would not produce good crops, after being well drained, but I never saw, and never expect to see one in New Hampshire. Everybody knows, or may know on slight reflection, that the richest part of the soil on the hills is constantly working into the low places. This process has gone on for thousands of years, and I know of no compensating process which returns again this rich deposit to the hills.

These low places, these swamps, are then the very store-houses of Nature for her treasures of fertility. So theory teaches, and experience verifies the theory. By the same law of gravitation, the water as well as the soil is left in those valleys, and so we usually find them too wet for our cultivated crops. Two things then are to be done, before our upland crops of grass, or grain, or roots, can thrive upon them. The first is.

DRAINING.—Examine your ground carefully at the outset, and be sure that you know whence the water comes that makes the land too wet. Does it rain down upon the hills and run into the swamp, and so flood it from want of an outlet? or does some stream back up upon it from below, raised by a dam, which some factory or grist mill has a right to keep up? or does it flow into the land from springs which burst up around the edges, or perhaps in the midst of it, at the bottom? If the water runs in on the open surface, the obvious mode of drying the swamps is to make open ditches that shall cut it off before it reaches the low land, or if this cannot be done, to collect it at the outside, in open ditches, and conduct it off through the lot as speedily as possible. If you have back-water from a dam to contend with, perhaps your best course is to sell out and move off, for in many local investigations which I have witnessed, I have never been able to see any limit to the effect of back water.

It not only rises to the height of the dam, but is drawn by capillary attraction as well as piled up by the retardation of the stream, so that nothing but actual experiment can determine where the effect of the dam ceases. Besides that, the effect of the back-water, which of course produces stangnant water in the ground, is far worse than that of running water. In nine cases out of ten, howeeer, meadows in this part of the country are rendered too wet by spring water, which is rain water falling on higher land and passing down into the earth till it finds a water-bearing stratum, frequently clay or rock, but sometimes compact gravel, upon which it runs until it comes out at the surface or oozes through the soil, rendering it cold and barren. I have at this time a drain on open land which has been mowed eight years, and which I have plowed since haying, to be laid down with grass seed and turnips, which gives a good illustration of the operation of these cold springs. I noticed a wet place after plowing, and had a hole dug with a spade to ascertain the cause. This is a spot on a hill-side, perhaps fifteen feet above the level of the stream which runs along twenty rods below. First came about a foot of dark soil, then two or three inches of white compact sand, then about six inches of red gravel, and under this down to the centre, for aught I know, solid clay. The water filled the hole in an hour or two, to within a foot of the surface of the ground, and this in a dry time. Water cannot pass through clay, but runs on the top of it, *in* the ground, just as on the surface, only slower, and breaking out thus on the hill-sides, and very often at the edge of a swamp, drowns all vegetation, without showing itself at all on the top of the soil. Usually water flows into a swamp only from one side. The substratum of clay, or other impervious substance, frequently has a dip or inclination much more regular than the visible surface, and carries the water in one direction, as for instance on my farm, from north to south. To intercept and cut off this water, cut a ditch *across* the course of it, deep enough to cut *into* the stratum on which the water runs, a few inches, otherwise the water will run under the bottom of the ditch, and come out as before.

For want of stones, I have made use of *brush* for underdrains, covering it with turf. These answer a good purpose for eight or ten years. I am now using strips of pine boards, which I happen to have on hand, sawed six inches wide. Two of these I nail together, and lay the edges upon old boards in the bottom of the drain, forming a triangular opening. On this, I place swamp hay, bushes or tan, and cover up. In wet land I find bushes that were laid eight years ago, quite sound, so that I think pine boards will last many years. This seems a shiftless way of doing the business, but my farm affords no stones, and we have not arrived at the dignity of drain tiles yet, and on the whole we many say of it, as a woman said of her husband who was not a pattern of good morals "He is no great of a husband, but he is *a dreadful sight better than none.*"

If open drains are used, cut the drains at an angle of forty-five degrees, so that they will not fall in. If underdrains are used, cut them nearly perpendicular, and as narrow as is convenient.

KILLING-OUT THE WILD GRASS.—The cheapest, quickest and best method of killing-out the bad grasses, is to *plow* the land. If the mud is very deep, this perhaps cannot be done, but if there is not more than a foot or eighteen inches of mud, land ought to be drained enough, so that the plow can be used. Hauling sand or gravel upon a swamp to form a soil, on top of the wild grass, is an endless task. It requires about one hundred ox-cart loads of earth to cover an acre one inch deep, and it requires several inches to kill swamp grass. After the land is plowed, almost any sand, gravel or soil, is beneficial to a bog meadow, applied to the surface and harrowed in with the grass seed. I should advise to apply manure of some kind.

A compost of guano, at the rate of two hundred pounds to the acre, I think is well adapted to bog meadows, which contain the elements of fertility in themselves, though frequently combined with acids which render them unproductive at their first exposure to the air. The action of frost, after a swamp is drained, and exposed to the atmosphere by planting and hoeing for a season, usually is found to add to their fertility.

No rule can be given as to the distance at which drains should be laid from each other. Frequently a single drain across one or two sides, will cut off all the water from several acres, but if springs burst up at the bottom, drains must be run from them so as to carry off the water. A foot or two of black mud, is as good as a greater depth, so far as I have ascertained, and usually is much more easily cultivated, because cattle may work upon it however wet it may be, if there is not depth enough of mud to get them mired in.

On the whole, if I were looking for a farm in New England, I should regard a wild swamp of twenty or thirty acres as coming in the way of recommendation, only a little lower than the convenience of common schools and gospel privileges. It is up-hill work farming hereabouts, on a farm entirely upland, and I have found no farming operation more satisfactory, than converting a dismal swamp into a beautiful and productive grass field.

——:o:——

Draining and Reclaiming Swamps.

The following detail of operations in converting a worse than useless swamp into a most fertile piece of land, was furnished to

the N.Y. State Agricultural Society, by Wm. Johnson, of Elmwood Farm, near Geneva, and will appear in its forth-coming vol., of Transactions.

B. P. Johnson, Esq., Secretary ;—I have on my farm about eighteen acres of flat, low land, being a sort of a basin for the deposit of the water running from a large tract of surrounding lands. The soil is a kind of vegetable mould interspersed with clay, with a clay subsoil. Ten years ago I purchased the farm on which I now reside. At that time this piece was over-grown with small trees, bushes, willows, bog-grass, &c., presenting a most unsightly appearance, and was considered almost a nuisance ; in fact it was known and pointed out as *the swamp*. The spring after I came into possession of it I cut down all the trees and bushes, burned them, together with a large quantity of old logs, tree tops, &c., then dug an open ditch two and a half feet deep through the lowest part of it, which carried off a considerable portion of the *surface* water, and was really a great improvement, but was not what the land required, (nor what I intended to do as soon as more pressing improvements were disposed of,) it being a rough uneven piece, full of holes, with a close tenacious subsoil, the water standing in the low places a considerable portion of the year, and of course too wet to be tilled with any success. Last spring I commenced the work of underdraining it in earnest, by cutting a ditch along the east and lowest side of the lot for a *main drain*, thirty inches deep, to be laid with six inch tile. I then commenced on the north and lowest end of the lot with the cross drains, making them about thirty-two feet apart, (varying them a little according to the situation of the surface,) nearly at right angles with and entering into the main drain.

Now for the *result*—as the drains progressed the water began to disappear from the surface, and within about one week after the drains were dug, the water *entirely* disappeared from the *lowest places*. The effect was striking and remarkable to every one who witnessed it. That portion through which the drains had been cut being entirely dry, whilst the other portion immediately adjoining, was literally soaked in water, and as fast as the drains progressed the water would as rapidly disappear. The experiment has proved *entirely* satisfactory, and I have already plowed about one-third of the lot, and intend to plant the whole of it to *corn* next spring ; in fact I expect after it shall have been thoroughly tilled, it will be one of the *driest* lots on the farm, and if the season proves favorable, I have no doubt that the corn crop will tell well next year.

The actual amount expended in draining the nine acres described above, is $234.20, showin the whole expense to be about $26 per acre, the items of which are given below,

To digging 630 rods of drain, at 12c.,	$75 60
To digging 42 rods main drain, at 14c.,	5 88
To 588 six inch tile, at $18 per 1,000,	10 50
To 1,680 two inch pipe tile, at $12,50 per 1,000	21 00
To 7,560 one and a half inch pipe tile $9 per 1,000	68 04
To drawing 588 six inch tile,	2 00
Do 1,680 two inch pipe tile,	2 50
Do 7,560 one and a half inch pipe tile,	11 00
To 400 feet of lumber for bottom of main drain,	4 00
levelling bottom and laying tile, 672 rods at 2c., per rod,	13 44
filling same, 3c., per rod,	20 16
	$234 20

The cost per rod of the different sized drains, with the *items*, are given below—the difference in the cost being chiefly the difference between the price of *large* or *small* tile, viz :

Five hundred and eighty-eight six six inch tile,	$10 58
Digging forty-two rods, 14c per rod,	5 88
Laying and filling same,	2 10
Drawing tile,	2 00
Lumber for bottom,	4 00
Total expense,(or 58½ cts. per rod.)	$24 56

Two inch Tile.

One thousand six hundred and eighty 2 inch tile, at $12.50 per thousand,	$21 00
Digging 120 rods at 12c.,	14 40
Laying and covering tile, 5c.,	6 00
Drawing tile, $2.50,	2 50
Total, (or 36¼ c. per rod,)	$43 90

One and a half inch Tile.

Seven thousand five hundred and sixty 1½ inch tile at $9 per thousand,	$68 04
Digging 510 rods, at 12c.,	61 20
Laying and covering same,	25 50
Drawing tile,	11 00
Total, (or about 32⅓c. per rod,)	$165 74

Thus I have given a correct history of the above, hoping that it may be the means of inducing my brother farmers to improve some of the waste places on their farms which are now entirely worthless, and when thus improved are the most valuable part of their farms, and would by thus doing add many valuable acres to their farms.

I have endeavored to give the *facts* distinctly, and in such form that I hope you will be able to understand them.

WILLIAM JOHNSON.

—:o:—

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

31*st Oct.*, 1856.

Hay from 10 to $12 per 100 bundles.

Straw from 3 to $5. do.

Fresh Butter, per lb. from 1s 2d to 1s 3d.

Salt Butter, do from 10d to 11d.

Country Cheese, from 6d to 8d.

Wheat, none offered.

Barley, 2s 6d to 3s.

Rye, none.

Oats, from 2s to 2s 2d.

Yellow Indian Corn, from 3s 9d to 4s.

Indian Corn, (Ohio) 2s 9d to 3s.

Buckwheat, from 2s 9d to 3s.

Peas, from 3s 6d to 3s 9d.

Beef, per 100 lbs. from $5 to 8.

Pork, $9 to $10 per 100 lbs.

Mutton, per lb., from 5d to 7d.

Veal, 6d to 7½d.

Eggs, 10d to 11d.

Honey, per lb. 7½d to 8d.

JUST PUBLISHED, FOR 1857.

THE ILLUSTRATED ANNUAL REGISTER of RURAL AFFAIRS and CULTIVATOR'S ALMANAC for 1857. 288 pages. Embellished with ONE HUNDRED AND FIFTY ENGRAVINGS. Price 1s 3d.

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Feed Mixer	1
Fruit Culture	10
Grain Binder's Wheel Rake	1
Harrows	4
Horse Pitchfork	1
Hay Press	1
Laying Out Farms	7
Log House	1
Mowing Machines	2
Mice Gnawed Trees	3
One Story Farm House	4
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Revolving Hay Rake	1
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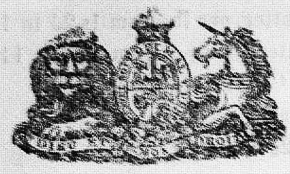

BUREAU OF AGRICULTURAL STATISTICS,
25th July, 1856.

TO EMIGRANTS AND OTHERS SEEKING

LANDS FOR SETTLEMENT.

The PROVINCIAL GOVERNMENT have recently opened out THREE GREAT LINES OF ROAD, now in course of completion, and have surveyed and laid out for Settlement the Lands, through, and in the vicinity of which those Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "THE OTTAWA AND OPEONGO ROAD," THE ADDINGTON ROAD and "THE HASTINGS ROAD."

The Ottawa and Opeongo Road

Commences at a point on the Ottawa River, known as "Ferrall's", a little above the mouth of the Bonchere River, and runs in a Westerly direction, passing through the northerly part of the County of Renfrew.

It is intended to connect this road with a projected line of road known as "Bell's Line" (leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Brudnell, at a distance of about 53 miles from the River Ottawa, forming with "Bell's Line," a great leading road, or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for settlement a vast extent of rich and valuable land.

This road, and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Lands in this district is Mr. T. P. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from MONTREAL up to the Ottawa River to a place called Bonchere Point, and thence by land come twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

The Addington Road

Commencing in the Townships of Anglesea, in the northern part of the county of Addington near the Village of Flints Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 35 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is Mr. E. Perry, who, for that purpose, is now resident at the Village of FLINTS MILLS. The outlines of five townships of very superior land are already surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka, and between it and the River Madawaska. The Townships are called respectively Abinger, Denbigh, Ashley, Effingham, Anglesea, and Barrie.

The direct route to this Section is by way of KINGSTON, Canada West, thence to NAPANEE, either by land or Steamboat, and thence Noth to the Township of Kaladar, and the Village of FLINTS MILLS where Mr. Perry resides.

The Hastings Road

Almost paralled to the Addington Road, and at a distance West from it of about 32 miles is the HASTINGS ROAD. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the OTTAWA AND OPEONGO ROAD and its extensions.

The Government Agent is Mr. M. P. Hayes, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order—The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles, and money is now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce, as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this Section, which is easily accessible, is by KINGSTON, Canada West, thence by Steamboat up the Bay of Quinte to BELLEVILLE, 56 miles—and thence by a good Road to HASTINGS, 28 miles.

In order to facilitate the Settlement of the Country and provide for keeping in repair the Roads thus opened: the Government has authorized Free Grants of Land along these Roads, not to exceed in each case ONE HUNDRED ACRES, upon application to the Local Agents, and upon the following

CONDITIONS:

That the Settler be eighteen years of age.

That he take possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years,—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of settlement are duly performed; after which accomplishment only shall the settler have the right of obtaining a title to the property. Families comprising several settlers entitled to lands, preferring to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot on which they live) provided that the required clearing of the land be made on each lot. The non-accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every information to the intending Settler.

The LOG-HOUSE required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived Settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The Lands thus opened up and offered for settlement, are, in sections of Canada West, capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce, grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighborhood of these three roads will be found to be very similar in quality and character, and covered with every variety of Timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for Manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet,—will produce a Barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate, is about FOUR POUNDS Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a

capital of from £25 to £50, according to the number of his family, will soon make himself comfortable, and obtain a rapid return for his investment. The single man, able and willing to work, needs little capital, besides his own arm and axe—he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these Districts is essentially good. The snow does not fall so deep as to obstruct communication; and it affords material for good roads during the winter, enabling the farmer to haul in his Firewood for the ensuing year from the woods, to take his produce to market, and to lay in his supplies for the future—and this covering to the earth, not only facilitates communication with the more settled parts of the District, but is highly beneficial and fertilizing to the soil.

In all the localities above named, wherever Settlers have surplus produce, there is a good market for it near to them—farm produce of all kinds being in great demand by the Lumber or Timber Merchants, who are carrying on extensive operations through-not these parts of the country.

According to the ratio of progress which Canada West has made during the last ten years, the value of property on an average doubles within that period; irrsepective of any improvements which may have been made by the Settlers.

In many Counties the value of Land, once opened for settlement has increased FIVE-FOLD in the period named, but the average value of such land, according to the statistics of Canada West DOUBLES EVERY TEN YEARS in the mere lapse of time, exclusive of any expenditure thereon—and it is not too much to expect that this ratio will not diminish for generations to come.

The Sections of Country opened by these roads lie in and to the Southern part of the Great Ottawa Region, stretching from and beyond them to the shores of Lake Huron, to Lake Nipissing, and to the Ottawa River—an immense extent of country whose resources are now seeking and will rapidly obtain development.

THE OTTAWA COUNTRY, lying south of Lake Nipissing and of the great River Ottawa, and embracing a large portion of the land offered for settlement, is capable of sustaining a population of EIGHT MILLIONS OF PEOPLE, and it is now attracting general attention, as the more western portions of Canada are being rapidly filled up;

The Parliament of Canada in its last Session, incorporated a company for the construction of a Railway to pass through this Ottawa country from the Shores of Lake Huron to the City of the Ottawa, and thence Eastward.

A survey of the River Ottawa and the neighbouring Country has been undertaken, and will be completed in the present year: its principal object being to ascertain by what means the River Ottawa can be rendered navigable and connected with Lake Huron so as to enable vessels to pass by that route from the most Western Waters into the River St. Lawrence and the Ocean. These projected works are alluded to, in order to show that the attention of the Government, Parliament and People of Canada has been fixed upon this important portion of the Province.

P. M. VANKUGHNET,
Minister of Agriculture, &c.

Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the undermentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODDRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl, (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

8th Range.

Lots 1 to 13 incl. (100 each,) 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68,) 6 (69), 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100), 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120) 48 (122), 49 (80).

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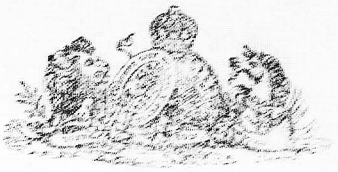


BUREAU OF AGRICULTUE AND STATISTICS,
Toronto, 15th August, 1856.

PRIZE ESSAYS.

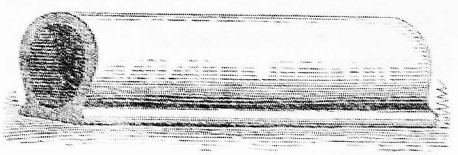
£10, £25, £15.

THE above PREMIUMS will be Paid for the Three Best Essays, respectively, on the Origin, Nature and Habits, and the History of the Progress, from time to time, and the Cause of the Visit, of the Weevil, Hessian Fly, Midge, and such other insects as have made ravages on the Wheat Crops in Canada, and on such Diseases as the Wheat Crops have been subjected to, and on the best means of evading or guarding against them.

The Essay to be furnished to the Bureau by the FIFTEENTH day of JANUARY next, and to be designated by a motto, a copy of which shall be also forwarded in a sealed note with the name and address of the author. The Prizes will be awarded according to the decision of a Committee, to be named by the Board of Agriculture for Upper and Lower Canada, or, in default of any such decision, by the Bureau, the Essays selected to become the property of the Bureau. A premium will only be awarded in case an Essay of sufficient merit is produced.

It is feared that the farmer in his eagerness to produce wheat, is not paying sufficient attention to the danger of over-cropping, and it is hoped the warning, and the information and advice which may be obtained through the Essays sought for, will aid in arresting the great scourges of the wheat.

P. M. VANKOUGHNET.
6 ins. Minister of Agriculture, &c.



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Crown Lands Department.

TORONTO, 29th August, 1856.

NOTICE is hereby given that the undermentioned Crown Lands in the Township of Montcalm, in the Township of Argenteuil, L. C., will be open for sale to actual settlers, on and after the FIRST day of OCTOBER next, on application to GEORGE KAINES, Esquire, the acting local Agent at Grenville, in said County, on the following terms, viz.:

The price to be one shilling and six pence per acre, payable in five equal annual instalments, with interest: the first instalment to be paid upon receiving authority to enter upon the land,—actual occupation to be immediate and continuous,—the land to be cleared at the rate of two acres annually for each hundred acres during the first five years,—a dwelling house, at least sixteen feet by eighteen feet, to be erected,—the timber to be reserved until the land has been paid for in full and patented, and to be subject to any general timber duty thereafter,—a License of occupation, not assignable without permission,—the sale and License of occupation to become null and void in case of neglect or violation of any of the conditions,—the settler to be entitled to obtain a patent upon complying with all the conditions,—not more than two hundred acres to be sold to any one person:—

TOWNSHIP OF MONTCALM.

First Range.

Lot 2 (90), 3 (63), 4 (64), 7 (115), 8 (114), 9 (114), 10 (113), 11 (112), 12 (111), 13 (110), 14 (109), 15 (108), 16 (107), 17 (106), 18 (105), 19 (104), 20 (103), 21 (102), 22 (101), 23 (100), 24 (99) 25 (98) 26 (87), 27 (82), 28 (96), 29 (79), 30 (88), 31 (100), 32 (100), 33 (100), 34 (73), 35 (32), 36 (81), 37 to 54 inc. (100 each.)

Second Range.

Lot 2 (60 acres), 3 (101), 5 (123), 6 (123), 9 to 25 inc. (123 each), 26 (118), 27 (100), 28 (100), 29 (100), 30 (100), 31 (82), 32 (95), 33 (100), 34 (99), 35 (89), 36 to 44 (100 each.)

Third Range.

Lots 3 to 30 inc. (100 each), 31 (82), 32 (97), 33 (86), 34 (76), 35 (32), 36 (85), 37 to 44 (100 each.)

Fourth Range.

Lots 1 to 20 inc. (100 a.ea.), 21 (87), 22 (73), 23 (100), 24 (100), 25 (100), 26 (100), 27 (100), 28 (100), 29 (92), 30 (69), 31 (71), 32 (66), 33 (81), 34 (85), 35 (62), 36 (74).

Fifth Range.

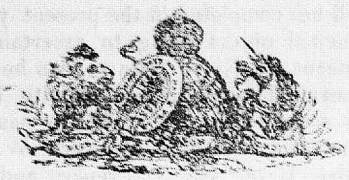
Lot 1 (100 acres), 2 (100), 3 (100), 4 (100), 5 (81), 6 (93), 7 (98), 8 (42), 9 (48), 10 (58), 11 (55), 12 (52), 13 (57), 14 (39), 15 (32), 16 (76), 17 (92), 18 (100), 10 (100), 20 to 28 inc. (100 ea.), 29 (84), 30 (88), 31 (100).

Sixth Range.

Lot 1 (19), 2 (16), 3 (47), 4 (65), 5 (75), 6 (59), 7 (51), 8 (51), 9 (31), 10 (72), 11 (76), 12 (100), 13 (100), 14 (100), 15 (50), 16 (24), 17 (41), 18 (59), 19 (92), 20 to 26 inc. (100 each.)

JOSEPH CAUCHON,
Commissioner.

3 ins.



BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvements to which the Fund is applicable is close at hand, it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows:—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch 159, and not already apportioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of those Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified,
W. H. LEE, C. E. C.
P. M. VANKOUGHNET,
Minister of Agriculture.

6 ins.

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Montreal, 1856.

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MONTREAL.

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BY PROFESSOR DAWSON.

These lectures will commence on the first Monday of November, at 4 P. M. and will be continued every Monday and Friday, until May 1. Thy will include the following subjects:—

CHEMICAL and Mechanical Properties of Soils—Soils of Canada—Organic and Inorganic Constituents of Plants and Manures—Detailed Consideration of the several Crops, their Culture, Diseases and Enemies—Manures, with the cheapest and best methods of obtaining and applying them—Rotation of Crops, its reasons and various kinds in use, enquiry as to possibility of avoiding rotation by use of special manures—Tillage, its principles and practice, sub-soil ploughing, draining, &c.,—Domestic Animals, their breeds and management, the Dairy—Orchard and Garden culture, varieties of fruits, diseases and enemies of fruit trees, small fruits and vegetables.

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English composition.	Mathematics.
French.	Chemistry.
Natural History.	

2ND YEAR.

English Literature.	Mathematics.
French.	Agriculture and Agricultural Chemistry.
Natural Philosophy.	

Or Students may remain for one Session only, and take with the Agricultural Lectures such other classes as they may desire and be competent to attend. Fee for lectures on Agriculture 25s, or for all the branches of the Special Course £5 per Session.

The lectures on Agriculture commence in November, to meet the convenience of persons engaged in farming; but Students desirous of entering for the Special Course, with the view of obtaining diplomas, should present themselves at the opening of the Session on the 10th September.

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The Farmer's Journal,

AND

TRANSACTIONS

OF

The Lower Canada Board of Agriculture.

Vol. IV. No. 8, Montreal, December, 1856. **POSTAGE FREE.** **Price 2s 6d per annum, in advance.**

The Farmer's Journal.

We are authorized to state that the Honble. the Minister of Agriculture has extended the time for receiving the Essays on the Weevil, Midges, &c., from the 15th of January to the 15th of April next.

——:o:——

We are obliged to leave over several articles to next month.

——:o:——

Board of Agriculture for Lower Canada.

The Board met at their Rooms, in this city, on Wednesday, the 29th day of October, 1856.

Gentlemen present:—R. N. Watts, Esq., President; Major Campbell, C. B., John Yule, Esq., Dr. Taché, M P.P., and Principal Dawson of McGill College.

The President having taken the Chair, the Secretary placed before the Board a list of the various subjects to be considered and decided upon, with the several documents connected with each, regularly marked and numbered.

1. Montreal Horticultural Society, a list of subscribing members sent to the office of the Board, with a view of obtaining a share of the government allowance to the County Society under the provisions of the Act 19 Vic., chap. 47. It was ordered that the Secretary of the Horticultural Society be desired to make his application in proper form according to Act 19 Vic., chap. 47, sec. 4, and, if found correct, the Society will receive what it may be entitled to, and the balance handed over to the Montreal Agricultural Society.

2. Application from the County of Soulanges to sanction the organization of an agricultural society for that county. To be informed that the application is granted, and the Society to go into operation next year.

3. Application from Mr. Chagnon to sanction the formation of an agricultural society for the Parish of St. Polycarp, in the County of Soulanges. The Secretary was directed to reply that the application cannot be entertained, as it is of a sectional nature.

4. Application from Mr. Guilbeault, of Joliette, to sanction an agricultural society for that county. The Secretary was instructed to request Mr. Guilbeault to refer to his letter of the 10th Oct. The Board having no documents before them to show the formation of the Society in April last, or any report of organization or the election of officers, can only refer the applicant to the Act 16 Vic., chap. 18, and 19 Vic., chap. 47, for information of the mode of establishing a society.

5. Application from County of Pontiac to sanction an agricultural society in that county. Answered by Secretary on the 10th of October, 1856. The answer was approved of by the Board.

6. Communication from the Committee for managing the celebration on occasion of the opening of the Grand Trunk Railway. The Committee to be requested to suggest in what way the Board can co-operate, and to inform them that the flags belonging to the Board were at the disposal of the Committee.

7. Application from C. A. Bailey to be paid a double Premium for his Durham Bull, to which was award e dafirst premium at the late Provincial Exhibition at Three Rivers. The Secretary had already desired him on the 24th instant to send a certificate of purchase and importation.

8. Communication from George Hagar, Esq., relating to a combined reaping and mowing machine. No reply necessary.

9. Communication from J. G. Barthe, Esq., Sec.-Treasurer Municipal Council Three Rivers, in relation to the £250 currency, promised by that Corporation towards the funds for the last Provincial Exhibition. The Secretary was directed to inform Mr. Barthe that his letter had been laid before the Board, to express the Boards's regret to find that there had been so much delay,and to request an early settlement of the claim so that the business of the exhibition might be closed.

10. Communication from Thos. Christie, Esq., Sec.-Treas. Sherbrooke Agricultural Society, No. 2, relating to various abuses, &c., &c. The Secretary was directed to acknowledge receipt of and thank him for his communication, which has been laid before the Board, and to request him to bring the subject more fully before the Board on some future occasion, with as many proofs as possible of the statements his communication contains.

11. Contract with Mr. H. Ramsay. To remain as it is.

12. What is to be done with the 100 copies of the Farmer's Journal sent to the Board? The Secretary to place them in equal proportions at the disposal of the members of the Board for distribution.

13. What is to be done with the copies of Mr. Taché's Report on the Paris Exhibition? To be distributed carefully. Secretary to call attention of President to this matter.

14. What is to be done with the Massachusetts Agricultural Societies works? Send one to each member of the Board, one to McGill College, one to the Laval University, and to keep the remainder in library.

15. Letter from Wm. Hutton, Esq., relating to filling up vacancies in the Board. The Secretary was desired to inform the Honble. the Minister of Agriculture that the Board met on the 29th instant, and unanimously recommended Benjamin Pomroy, Esq., of Compton, member of the Board in the room of James Thomson, Esq., of Shefford, resigned, and E. Dostaler, Esq., of Berthier, M.P.P., in the room of P. B. Dumoulin, of Three Rivers, deceased.

16. Dr. Tresler, Montreal, applied for a Certificate of Merit for a case of Dentist's Work, exhibited at the late Exhibition, Three Rivers, and recommended by the judges. Certificate to be granted.

17. Would it be advisable to add a fourth day to the next Exhibition at Montreal? Not advisable.

18. Dorchester Agricultural Societies. The government allowance to be divided between the two societies regularly organised and in operation.

19. Protest from Mr. Dods, President, and from Mr. Smith, the Sec.-Treas. of the Montreal Agricultural Society, against the premium awarded to Mr. A. Kimpton, for a two year old Ayrshire Bull, at the late Exhibition at Three Rivers. The Board have considered the letter of 3rd October. It has already been determined on the protest, as far as the age of the Bull is concerned. The charge that the Bull was entered as bred by Mr. Kimpton, while he was actually bred by another party is correct, and has disqualified him from taking a prize. This decision to be made known to Mr. Dods, Mr. Smith and Mr. Kimpton.

20. Letter from Mr. Farmer, of Three Rivers, relating to the rent he was to have paid for the privilage of having a refreshment booth upon the Exhibition Ground at that place. The condition upon which he obtained the exclusive right of selling refreshments on the ground—namely that no spirituous liquors should be sold, not having been faithfully observed, the Board decline to consider his application, which under other circumstances they might have been inclined to entertain.

21. Mr. Pomroy claims additional premiums for imported South Down sheep—and the decision of the Board in regard to the age of one of the rams exhibited. In regard to the age of the ram, the evidence concurring that he was either a lamb or a two year old, and there being no prize offered for lambs, the Board decline to disturb the decision of the judges, which awards him the second prize as a two year old.

22. Circulars to be sent the Agricultural Societies relating to the election of four Members to the Board in place of those who retire by rotation.—Also to notify them of the necessity of re-organising in February according to the Act 16 Vic. chap. 18, sec. 4 and 6.

23. The following Resolution was accidentally omitted in copying out for the printer the proceedings of the Agricultural Association, at their meeting held at Three Rivers, on the 19th of September last:—"That his Worship the Mayor of Montreal Henry Starnes, Esq., the Hon. James Ferrier, D. Masson, Esq., Chairman of the Finance Committee of the Montreal Corporation, and T. S. Brown, Esq., be named the Local Committee for the ensuing Exhibition at Montreal, and that their powers and duties shall be communicated to them before the first of January next, and that the Secretary communicate the above Resolution to each of these gentlemen, and request them to accept of the office.

24. Letter from Mr. Keith relating to the County of Beauharnois Agricultural Society.—Refer him to amendment Act of last Session, 19 Vic. chap. 47, send also a copy of the Resolution No. 1, passed at the last meeting of the Board, on the 3rd September.

25. Communication from Berthier Agricultural Society, claiming the right to have the Provincial Exhibition held there next year.—To inform them that it has been already decided to hold the next Agricultural Exhibition at Montreal.

26. Claim by proprietor of the *Pilot* for advertising a Ploughing match at Quebec in September, 1854.—Accounts were closed two years ago. This claim did not appear among them. To examine under what authority it was incurred?

27. Suggestions in reference to the Prize List to be prepared for next Provincial Exhibition, submitted by the Secretary—to be sent to Mr. Watts at Drummondville.

28. Hon. Mr. Vankoughnet's letter to Secretary when at Kingston Exhibition, in relation to the amount of Government allowance to Agricultural Societies, promising that the subject would be submitted to the Governor in Council.

29. Mr. Scott claims additional premium on an imported Boar, to which was awarded a first prize at Exhibition at Three Rivers,—ordered to be paid.

30. Accounts of the Board were directed to be audited by Major Campbell and Mr. Yule.

31. Letter from Mr. Gordon, Sec.-Treas. County of Huntingdon Agricultural Society, No. 1, enquiring if two agricultural societies might be organised in one county under the provisions of the late Act 19 Vic., chap. 47. Refer Mr. Gordon to the Act in question, by which he will see that with certain exceptions, two societies cannot be formed in one county.

32. Instructions were given to the Secretary, that every letter be daily entered as received in the letter book. That the subject of each letter be docketted on the outside, in addition to the name of the writer and the date of the letter, according to the practice hitherto pursued in the office, and that the date of the receipt of the letter, and date of the answer be also docketted upon the outside. That upon all other documents received, a short memorandum of the contents be made upon the outside of each, and that a summary of all the papers relating to such matters be laid before the Board at its meetings, for its information.

33. That the Secretary keep a separate book for the Agricultural business of each of the Counties of Lower Canada, in which book every letter received, every application made, and every decision taken will be entered respectively, and by order of date, with numbers referring to the records of original papers.

34. A letter from Mr. Fournier, Sec.-Treas. of the County of Vaudreuil Agricultural Society, No. 2, relating to the division of the government allowance to the two societies in that county, and stating his impression that No. 2 Society, were entitled

to receive £100 under the provisions of the Act 19 Vic., chap. 47, &c. The Secretary was directed to acquaint him in reply that the £100 grant will be available for Society No. 2 next year. That the distribution for this year bas been made according to population, as provided for by Act 16 Vic., chap. 18.

35. The accounts of the Local Secretary for the late Exhibition at Three Rivers were examined. The Secretary, Mr. Dumoulin, to be informed that the balance due to him appears, by his account to be £84 9s 9d currency, but that that the Board have no funds to pay it, until the Corporation of Three Rivers pays the £250 promised by them in aid of the funds for the Exhibition. That the small articles charged in Mr. Dumoulin's account be forwarded to the Secretary, as they may come into use for future Exhibitions.

36. The Secretary was appointed to prepare a catalogue of the library and property of the Board, to be submitted at its next meeting. The Secretary to effect insurance on the same without delay.

37. It was resolved that Mr. Watts, Major Campbell, and Mr. Yule, be a Committee to draw up a Prize List for the Exhibition to be held at Montreal, on the 16th, 17th and 18th of September next, and said list to be printed on the 1st February next..

38. The Board expressed their thanks to Mr. Sheppard, Seedsman, for a sample of Chinese Sugar Cane, grown by him in the neighbourhood of Montreal.

39. *Resolved.*—That the Members of the Board feel deeply the vacancy which has been made amongst them by the death of Pierre Benjamin Dumoulin, Esq., who so lately took an active part in the labours of this Board, and they desire the Secretary to forward a copy of this Resolution to the widow of the deceased—Madame Dumoulin, Three Rivers.

After two days session and the discussion of many subjects connected with agriculture, the members separated.

By order of the Board,

WM. EVANS, *Sec.-Treas.*
Board of Agriculture.

Montreal, 31st Oct., 1856.

—:o:—

The Farmer's Friends and His Enemies.

No. II.—The Wheat Midge.

The hopes of the farmer are often disappointed by creatures so minute that he cannot easily ascertain their true nature, and so varied that he is even puzzled by the names given to them by the naturalists, who make the study of such small creatures their occupation. The animal, whose name stands at the head of this article, is one of these minute plagues, and we may as well commence our notice of it by distinguishing it from other creatures with which it is liable to be confounded. The wheat midge is not properly a *weevil*, though it often goes by this name. The most common weevils are small beetles, with hard scaly wing cases, belonging to the tribe *Coleoptera*. Of this kind is the very destructive *Calandra Granaria*, or granary weevil, which destroys great quantities of grain in store-houses, and there are many other species of weevils of like habits, all of them belonging to the same great order of the Coleoptera.

Wheat is also liable to the attacks of moths, belonging to the order of the scaly wingod insects (*Lepidoptera*). Of this kind is the "Wolf," or little grain moth (*Tinea Granella*), a relative of the common clothes moth which it somewhat resembles. This creature also attacks wheat in granaries; and we have seen in growing grain, occasionally, a maggot or caterpillar, more than twice as large as that of the midge, which we believe to be the young of some species of moth, perhaps the Angumois moth (*Anacampsis Cereatella*), so destructive in the Southern States, or some similar species.

The wheat *midges*, on the other hand, belong to the order of the Diptera, or two-winged flies, and are closely allied to the sand flies, gnats and other small two-winged insects, so abundant in summer. Two species are well known to the American Farmer. One of them appears to be a native American, though popularly attributed, like many other evils, to the unfortunate Hessians employed in the wars of the American revolution. It is the Hessian Fly (*Cecidourgia destructor*), and attacks the stem of the young plant. The other is a native of the old world, but has been introduced into America. It is the (*Cecidouryia Tritici*), or true wheat midge, and attacks the young kernel of the grain when in the ear. In recent years it has been the most destructive of all the enemies of the wheat. Its habits are, therefore, well deserving of study, that we may, if possible, guard against its ravages, and they are also very interesting merely as objects of scientific inquiry.

The midge of the wheat is a little creature only a tenth of an inch in length. Its body is slender and of a bright orange colour, and it is provided with a pair of ample wings of delicate texture. Its beauty can be appreciated only under the microscope, when its wings fringed with delicate hairs and displaying iridescent colours, its elegantly framed and bright coloured body, its large eye, and its beautiful jointed horns or antennæ, will be found most attractive objects. The male is smaller than the female and has more finely ornamented antennæ.

In a calm summer evening when the wheat is in blossom, these creatures may be seen moving in countless numbers over some doomed field, busily engaged in depositing their little yellow eggs on the chaff scales of the young grain, and from these eggs are produced little orange worms which attach themselves to the young kernels of grain, and sucking out the juices render them abortive. In autumn, the little worms descending to the earth, bury themselves to the depth of several inches, and remain under ground till the next spring or summer, when they emerge in the winged state to renew the work of destruction. The habits of this creature appear to differ somewhat in different climates. Thus, it is said by some observers, to deposit its eggs within the chaff scales, but in some instances they are certainly deposited without. Some observers say, that the grub casts its skin and crawls down to the ground, others that when full grown, it becomes torpid and falls. The following extracts give what may be considered reliable information on the more important parts of the history of the creature. They are from a work on the agriculture of Nova Scotia, by Professor Dawson, and they are the more valuable as referring to a climate similar to that of Canada:—

"The observations of naturalists in England, where the creature has been much longer known than in America, have proved that the destroyer is the larva or grub of a minute midge, which deposits its eggs in calm summer evenings, on the chaff scales, whence the little grub when hatched creeps inward to the young grain, on whose juices it feeds. The only point on which any uncertainty remains is the manner in which the animal passes the winter—the prevailing opinion on this subject being that it enters the ground in autumn, though this does not appear to have been confirmed by experiment. To determine this point more precisely I made the following experiments.

I procured a quantity of the larvæ, full grown and in that motionless and torpid state in which they usually appear when the grain is ripe. A portion of these larvæ were placed on the surface of moist soil in a flower pot. In the course of two days, the greater number of them had descended into the ground, previously casting their skins which remained at the surface. I afterwards ascertained that they had penetrated to the depth of more than an inch, and were of a whitish colour, softer and more active than they had previously been. The fact is thus established, that these apparently torpid larvæ, when they fall from the ripe wheat in autumn, or are carelessly swept out from the threshing floor into the barn yard, at once resume their activity, and bury themselves in the ground.

The larvæ thus buried in the ground, were allowed to remain undisturbed during winter and spring, the flower-pot being occasionally watered. About the end of June they began

to reappear above the surface, in the winged form; the little grubs creeping to the surface, and projecting about half their bodies above it, when the skin of the upper part burst and the full grown winged midge came forth and flew off. This completes the round of changes which each generation of these little creatures undergoes, and we have thus actual evidence of each stage of its progress from the egg to the perfect insect.

The perfect midge is a pretty little creature, its body being of a bright yellow colour like that of the larva, its two large wings perfectly transparent with iridescent reflections, its eyes black, and its antennæ or feelers long and jointed; the male is smaller than the female, and has its antennæ ornamented with hairs. The flies are most active in calm and warm evenings, when they may sometimes be seen in clouds over the wheat fields. British observers say, that the female deposits her eggs within the chaff; but here, they appear to be generally deposited without.

However we may dread the destructive powers of the midge, we cannot withhold our admiration from the singular instincts with which it has been endowed. The female insect depositing her eggs where food and shelter are provided for the young brood; the larvæ when shaken from their summer abode by the storms of autumn, at once entering on a new and untried life in the soil; and the chrysalids working their way to the surface in the ensuing summer, to assume their winged state in time for the new crop of wheat, display a series of adaptations which may convince us, that, however annoying in the mean time to us, a creature so gifted cannot be without important uses in the economy of Providence.

It is evident, that if no check were opposed to the increase of these creatures, they must ultimately in every country where they occur, consume the whole or nearly the whole of the wheat crop. There are however such checks, some in natural causes, and others in expedients which may be adopted by man."

A good article on this insect appears in the Patent Office Report for 1854, and extracts from this article were published in the Canadian Naturalist for September, with some very sensible remarks by the Editor.

The great question how shall we get rid of the midge; still remains for discussion; and as this is the really practical view of the subject, and as many remedies have been suggested, we must, to avoid being tedious, postpone it to our next number. In the mean time we must remark, that any useful solution of the difficulty must depend on careful consideration of the facts that we know, respecting the habits of the animal; and we ask our readers to think of those above stated,--in their relation to possible means of arresting or destroying the midge.

——:o:——

As we were preparing an article on the wheat midge, we have not thought it necessary to reply to the queries of our intelligent correspondent in St. Joachim. Such answers as we can give, will be found in our articles of this and next number.

——:o:——

Scientific Agriculture as a Branch of Education.

Condensed from the Introductory Lecture of the Course on Agriculture in M'Gill College.

By Mr. Principal Dawson.

In entering on an experiment so novel as the commencement of an Agricultural course in this University, it may be necessary to state the mode in which we intend to study this important art, and the useful ends which we hope to attain. To these subjects then I shall devote this introductory lecture.

As a subject of University study, Agriculture must be regarded in its relation to Science. In our time, all useful arts are linked with scientific facts and principles, and it is to this connection that these arts mainly owe their high perfection and progressive improvement. The votary of abstract science may, in his researches, regard only the laws of nature, without reference to the arts of life; but these are the laws under which the mechanic or the farmer works. They surround him on every side; they have fixed the properties of all the things he uses for his purposes, have determined the steps of every process that can be successful. The relation which scientific truth thus bears to art, is akin to that which moral law bears to rectitude. Men may obey either physical or moral laws ignorantly, or merely because others have set them the example, but they will be liable to gross errors, and will not advance but will probably retrograde, if left in this state of ignorance or empiricism.

It is the business of our modern science carefully to explore nature, to ascertain the properties of every object, the laws which regulate every change and process, the conditions, in short, of existence and of action which the Creator has imposed on the things that He has made. Such knowledge must be eminently practical; it is truly power, inasmuch as it brings to bear upon matter which is the grand agent of our mastery over it, the influence of enlightened thought. All the great agencies of nature, heat, electricity, light, the various laws and properties of fluids, of solids, of gases and vapours, have been searched out in their most secret hiding places, and broken in and harnessed for the use of the artizan, by scientific inquiry, and every day new uses of substances, improvements of processes, adaptations of machines, are being carried out; while every new fact or principle utilised, brings in its train the use of many others.

All this applies eminently to Agriculture. The farmer is not a mere manual laborer. He has to do with soils of complex composition, liable to ruinous deterioration, susceptible of vast improvement. He has to tend and rear vegetable and animal organisms, of complicated and varied structures and habits. He is brought in every part of his work directly into contact with nature and its laws. He is, in short, the true alchemist, whose task it is to bring out of the earth, and of things cast aside as worthless by other artists, that most valuable of all products, human food. His skill and knowledge make of the desert a fruitful field; his ignorance and carelessness may reduce the most fertile lands to desolation.—Above all, the farmer is an independent workmen. Isolated on his farm, he has to judge for himself in many cases of doubt, has to plan his own processes, and to adapt them to his own circumstances. In order countries farming, like great manufactures, may have its planning done by a few heads, while the details may be carried out by hands skilled only in a few mechanical movements; but the independent small farmers of such a country as this, must have the intelligence to manage, as well as the skill to work.

No art has, in our time, derived greater benefits from physical science, and especially from chemistry, than agriculture. Soils, manures, and plants have been analyzed; the causes of fertility and barrenness, of running out and impoverishment, the means of supply of the most valuable constituents of crops, the enemies and diseases of cultivated plants, and multitudes of similar subjects have engaged the attention of practical men of science; and the result is that in older countries agriculture has become a scientific art, and has been brought to a pitch of profitable perfection that our grandfathers would have regarded as altogether chimerical. By the application of sound scientific knowledge, we see in the old world land that has been cultivated for ages, brought back to virgin fertility. By the neglect or ignorance of scientific farming, we see in America some of the most fertile tracts in the world being rapidly reduced to unproductiveness.

In what way can we by these lectures, aid in effecting for this country the desirable union of science with agricultural art. We are not in a position at present to train practical chemists, nor to train practical farmers. Practical chemistry is a profession to be studied by itself, and requiring a long and careful apprenticeship for its succesful pursuit. The practical labour of a farm can be learned only on a farm. We propose to ourselves the more humble task of acquainting our students with the bearing of scientific truth on agriculture, and especially on the agriculture of this country; of occupying the leisure time of winter with instruction in principles which may be profitably reduced to practice in the fields of summer. Few farmers, it is true, can attend this course, but even a few active minds trained in correct principles, may be of inestimable value to the country, by their precept and example. We desire also that our regular college students may learn to love and respect agriculture, that in whatever position they may be placed, they may be able and willing to contribute towards its improvement, and thereby to advance what must always be the main stay of Canadian industrial prosperity.

The course of agricultural study which we can profitably pursue here, very naturally divides itself into two branches: 1st. Agricultural chemistry, with its relations to geology and physiology. 2nd. The practice of agriculture, with special reference to its scientific principles.

Chemistry, and its allied sciences, regard agriculture with reference principally to the soil which the farmer cultivates, the plants which grow upon it, and the manures applied to it.

The *soil* we must study in its origin from the rocks of the earth; in its composition, and the properties of its ingredients; in the causes of its fertility or barrenness; of its impoverishment by cropping, and its improvement by tillage; in its mechanical texture, and the relations of this as well as its chemical composition, to the air, to water, and to the food of plants. Such enquiries will enable us, on the one hand, to understand the nature of originally fertile soil, and the changes which it undergoes under various kinds of management, and, on the other, to appreciate the causes of absolute or comparative barrenness, and the means by which it may be remedied. With the aid of a collection of specimens of the rocks and soils of Canada, and of the published analyses of Prof. Hunt, in the reports of geological survey, we hope to study the principal soils of the province in relation to all these points.

In relation to the *plant*, we have to consider the nature of its various ingredients, whether organic or inorganic; the sources in the air, the earth, the soil, and manures, whence they are derived; the proportions required by various plants, and the best means of supplying them; the wonderful structure of the vegetable fabric, and the manner in which it produces from the materials on which it subsists, the various valuable articles of food which it affords. We have also to consider the nature and relative value of these articles as food for man and animals. On these subjects the discoveries of chemistry enable us to speak with great confidence; and the ascertained requirements of each crop from the air, the soil, and manures, and the composition of the various vegetable products of the fields, enable us to understand distinctly the principles of rotation, the application of special manures, the relative value of various articles of food, and many other important points, which, without such knowledge, must be involved in doubt and darkness.

The consideration of *manures* is hardly less interesting than the previous topics, and quite as useful. Here we have to consider the decay of dead vegetable and animal matter, and its resolution into the food of plants; the composition and modes of applying and economising the rich manures; the use of special manures in particular soils, and for particular crops. We have also here to discuss the many debated points as to the value of mineral and artificial manures, and the circumstances in which they can be advantageously applied. The composition and relative value of the various barn-yard manures—the losses which they are liable to sustain—the best modes of preserving and applying them—the circumstances in which guano, superphosphate of lime, bone dust, wood ashes, lime, gypsum, and all the other manures not produced on the farm, are likely to be useful and remunerative, can be effectually settled only by the application of chemical knowledge.

The second division of the subject will be of a more direct practical character, and will afford more full opportunities of applying the principles studied in the first. Here we must study in the first place the several cultivated crops; their modes of culture; their preferences in relation to soil, treatment, and manure; their produce; their enemies and diseases. The important and too much neglected subject of rotation connects itself with this part of the course, in its relations to the work and economy of the farm, and leads to the very practical departments of draining, subsoiling, and tillage in general. From these we shall pass to the varieties and treatment of cattle and other domestic animals, and to orchard and garden culture, and a variety of other subordinate details of the work of the husbandman.

The course which I have thus shortly sketched, opens up a large field of interesting and profitable study. It leads us to the consideration of all these processes by which the great Husbandman above produces out of the earth food for every living thing, as well as to those humble imitations by which the farmer, as His deputy, effects similar results on a smaller scale. Its benefits, therefore, are not inconsiderable even to the non-practical man; but to the practical farmer, especially to the young farmer, it cannot fail to afford greater benefit. To him it gives the advantages of enabling him to understand the principles as well as the processes of his art, and thus to become a *scientific* farmer; and the facilities which we offer in connection with these lectures, for attendance on our other classes, may, by the literary cultivation there obtained, enable him to be also a *learned* farmer, able to explain efficiently his views to others.

Book farming is little respected by many good farmers, and to some extent deservedly so.—Good agricultural books suppose a certain amount of knowledge in those who are to be benefitted by them. But few agricultural books, and still fewer agricultural articles in periodicals, are really good. They too often state facts or experiments without appreciation of the conditions on which success or failure depended. They may be the results of experience, but to benefit by that experience we require to know the conditions on which it was successful or otherwise; or failing this, to be able to judge from the nature of the facts, the applicability of the process in new circumstances. It thus happens, that for want of scientific knowledge in those who write and those who read, the book farmer is continually incurring the disgrace of costly failures, which most unjustly bring scientific farming into disrepute, being caused not by the errors of science, but simply by want of it. A course of study such as that now commenced, will, before the end of the session enable any intelligent young farmer to read with advantage the best scientific books, and to judge accurately as to the real value of the half truths so often presented in unscientific works.

In like manner attention to these lectures should enable the young farmer to appreciate, and use with advantage, the various mineral and artificial manures, and to avoid the errors which have so often caused these to be overvalued or unduly depreciated. It should enable him to know the various properties and composition of the soils with which he will have to do, to avail himself of the analyses of the practical chemist, and without analysis to estimate very nearly the quality of any particular soil. It should enable him better to appreciate the requirements of the several cultivated crops and domesticated animals, and more fully to understand the merits and uses of their several varieties, and the diseases to which they are subject. It should give him enlarged views of agriculture as practiced in various countries and under different circumstances; as susceptible of a vast variety of methods, more or less valuable, and as intimately connected with the natural laws and processes revealed by science. In these, and many other ways, it must tend, not only to add to the productive value of his labours, but to make him love his art, and appreciate its true position.

Guided by sound scientific principles, pupils leaving this class, will thus be able to set a good example, to explain the reasons of what they do, and to judge of its applicability to the cases of others. They will have strong tendencies to observe carefully; they will understand the causes of gradual impoverishment of the soil, and other evils affecting our agriculture, and be able to suggest and apply remedies. They will thus dignify their art, and feeling its true dignity they will be zealous for its advancement.

To secure such advantages we have no hesitation in inviting farmers to send us their sons, and to favor us occasionally with their own presence; and if it should prove that what we thus offer is not valued by the class whom we specially aim to benefit, we shall still deem it of importance as a means of introducing our students to this most ancient, important and deeply interesting art.

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Guano seems to operate well on all soils when it is properly spread and mixed. It should never be placed in the hills of any kind of plants, for its heat destroys the fine shooting roots.

Three hundred pounds per acre is the usual quantity sown for corn or wheat, and this is mixed with three or four times as much loam for convenience of sowing, and to prevent waste.

Our own practice is to turn down the guano on to a clean loam in the garden or field, and mix it thoroughly as above, piling the whole in a heap like a hay cock. Here let it lie for a week, and till all the lumps have become mellow enough to fall to pieces, and to be mingled intimately with the earth thrown over it. No pounding of the lumps will be necessary, for they fall to pieces on stirring with the hoe or spade. The heaps should be overhauled three or four times during the week.

Let the mass be sown broadcast over the field, and let the harrow be used freely to prevent loss by exposure to the air.

As to the time of ploughing clayey soils, you must watch your opportunity. They should never be turned up when they are wet, for this turns them to brick bats,—and if you wait till a dry time you will not be able to set your plough in.—*Ploughman*

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Dairy Management and Butter-Making.

Some of our readers will recollect that about a year ago we gave them some account of the modes of management which were pursued by Mr. HORSFALL, a distinguished dairy farmer in England. This Mr. H. proves to be quite an enthusiast in all matters connected with the dairy, and has continued, ever since his last communication to the public nearly two years ago, earnestly and perseveringly devoted to the making of experiments, and to watching the effects both of former practices and of the experimental changes which he has more recently introduced. In the course of the last two years he has accumulated quite a large stock of observations in regard to the management of dairy stock, the results of different modes of feeding, and the making of butter, and he has invited the public to visit his dairy, and listen to the story of what he has been doing and witnessing during these two years. Let us accept his invitation and listen to what he may be pleased to tell us of his doings and their results. We cannot but derive some useful hints from one who is not only enthusiastic, but also prudent and judicious, in this branch of the farmer's many-sided business. To the report of his remarks we will add some comments and inferences of our own as we proceed.

Treatment of Cows for Dairy Purposes.

Mr. Horsfall informs his audience, in relation to this matter, that, according to reliable authorities, store cattle of medium size, not working any, will maintain their weight and condition for a length of time, when supplied daily with 120 lbs. of Swedish turnips (ruta bagas,) and a small portion of straw. It has also been proven by experience that such cattle will maintain their condition on 21 lbs. of meadow hay each per day. These respective quantities of turnips and hay correspond very closely in their nutritive properties, as they contain a very similar amount of albuminous matter, starch, sugar, &c., and also of phosphoric acid. Of oily matter the hay contains more than the turnips.

But though the above named quantities of hay and turnips are found to be sufficient to maintain store cattle in fair condition, they are insufficient for cows giving milk, of a corresponding medium size. In fact, cows in milk supplied only with the kinds and quantities of food above mentioned, lose perceptibly in condition. This is easily explained, when it is considered that the milk contains those substances which otherwise would have served for support—or in other words, that what would in store cattle go to flesh and fat, in milch cows must go to form milk. The food of milch cows ought, therefore, to be greater in *quantity*, or better in *quality*, than that of store cattle or unworked cattle of a like size and weight. This is a fact or rule which is not unfrequently neglected in the winter management of milch cows, much to the injury of the cows and their produce, as well as to that of their owners. Cows in milk that fare no better than store cattle, with just enough to keep them in fair condition, must lose in condition, or fall off in milk, or both.

The object of some dairymen, in the vicinity of cities and large villages, whose dairy produce is disposed of in new milk, is to produce the largest quantity with but little regard to the quality. With this view they supply food more adapted to produce quantity than quality, and pay but little regard to the maintenance of the condition of the animal. Some think it more profitable to purchase cows in good condition, or well stored with flesh and fat, than those in a less high condition even at a much lower price, as the stores of fat and flesh already laid up serve as material for their purpose better than the amount of food which cows in a poorer condition would require in a similar length of time. Treated with large quantities of liquid and flashy food, the cow loses condition during the process of milking, and when no longer profitable is sold to purchasers in farming districts where food is cheaper. From facts of this kind we may hold it to be established that there are some cows (though all are not so,) which convert not only the elements of their food, but also their accumulated stores of flesh and fat, into the components of milk, cheese, or butter.

The object of the dairyman, whose experience we are now considering and condensing, is different from that of those who dispose of their dairy produce in new milk. A considerable portion of his dairy produce is intended for batter, for which poor milk is not adapted, and he fattens, also, not only his own cows, but others purchased for this purpose. With this object in view he has endeavored to devise food for his milch cows which will enable them to preserve or even improve their condition, and at the same time to furnish a maximum yield of cream and butter. In devising food for this purpose he naturally turned his attention to the composition of milk—a scientific and appropriate mode of procedure for determining the essential constituents of the food, from which the milk was to be manufactured in the living laboratory of the cow. Science, as well as experimental trials, ought to be consulted in determining the kinds of food which will yield a *maximum* amount of milk and butter, while at the same time the condition of the cow is fully preserved, or improved rather than impaired. Looking at the composition of milk, and taking four gallons a day or about forty pounds, as a full yield, Mr. Horsfall could easily see, as any one else may who has the requisite chemical knowledge, that he could not obtain a full or maximum yield from the use of ordinary farm produce alone. Turnips in any considerable quantity are objectionable on account of their flavor; and of hay it would require beyond the amount necessary for the maintenance of the cow, the addition of a larger quantity than she could possibly consume—that is, of fully twenty pounds for the supply of casein in a full yield of milk, with forty-pounds for the supply of oil for the butter, and of nine pounds for that of phosphoric acid. Mr. H. had therefore to seek assistance from what are usually termed artificial feeding substances, and to select such as are rich in albumen, oil and phosphoric acid; while at the same time he had to pay due regard to their comparative cost, with a view to a satisfactory profit.

The food which Mr. H. was led to fix upon, to carry out these purposes, after various modifications, has for the last two seasons consisted of rape cake 5 lbs, and bran 2 lbs., for each cow, mixed with a sufficient quantity of bean straw, oat straw, and shells of oats, in equal proportions, to supply them three times a day with as much as they will eat. "The whole of the materials are moistened and blended together, and after being well steamed, are given to the animals in a warm state. The attendant is allowed 1 lb. to 1½ lb. per cow, according to circumstances, of bean meal, which he is charged to give to each cow in proportion to the yield of milk, those in full milk getting 2 lbs. each per day, others but little; this is dry and mixed with the steamed food on its being dealt out separately. When this is eaten up green food is given, consisting of cabbages from October to December, kohl rabi till February, and mangold till grass time. With a view to nicety of flavor, I limit the supply of green food to 30 to 35 lbs per day for each. After each feed 4 lbs of meadow hay, or 12 lbs. per day, is given to each cow; and they are allowed water twice per day to the extent they will drink."

As several of these materials are not commonly used as food, Mr. H. makes

some observations on their properties. Bean straw, he says, when uncooked is dry and unpalatable; but by the process of steaming it becomes soft and pulpy, emits an agreeable odor, and imparts flavor and relish to the mess. In albuminous matter, which is especially valuable for milch cows, it has nearly double the proportion contained in meadow hay. Bran, also, undergoes a great improvement in its flavor by steaming, and is probably improved in its convertibility into nutriment, of which it contains considerable when not *too closely* ground, as it has been very generally in this country of late years. We have known bran to be so closely ground as to be worth scarcely any more than the same amount of straw would have been, if ground; whereas *good* bran contains about 14 per cent. of albumen, and about 3 per cent. of phosphoric acid. The properties of rape-cake make it valuable for the purpose of making butter, as it is rich in oil and also in albumen and the phosphates. "Chemistry," says Mr. Horsfall, "will assign to this material, which has been comparatively neglected for feeding, a first place for the purpose of which I am treating. If objection should occur on account of its flavor, I have no difficulty in stating that by the preparation I have described, I have quite overcome this." He says the flavor of the cake, when cooked, is not in the least perceptible, either in the milk or the butter. He says, also, that his cattle, of which 60 to 80 pass through his stalls in a year, eat the quantity of cake above mentioned without any reluctance. Uncooked rape-cake is usually rather distasteful.

The foregoing is Mr. H.'s mode of feeding his milch cows during the winter. In summer, they have a steamed mess morning and evening, with some mown grass or a little hay, and are pastured during the day.

(To be continued.)

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PLOUGHING MATCH.—The City of Montreal and County of Hochelaga Agricultural Society held their annual ploughing match, on the farm of Michael Raymond, Esq., in the Parish of Longue Pointe, near this city, on Thursday, the 6th instant. Owing to the lateness of the season and the intense cold, there were not so many competitors as the officers of the society expected, and a further postponement was suggested. The hardy sons of the soil were not, however, to be baffled, and after some little discussion it was determined to proceed. The ground being of a stiff, clayey description, with a pretty stiff cake of frost on the surface, rendered it no easy matter to plough. The competitors got through the quantity of land assigned to them at dusk, when the work, was inspected by the Judges, who thereupon awarded the following Prizes:—

English Class.

James Forrest, Ploughman to James Logan, Esq.—1st Prize.

James Muir, Farmer, Sault au Recollet—2nd Prize.

Thomas Prince, James Logan's Forman—3rd Prize.

Daniel Drummond, jr., Farmer, Petite Cote, 4th Prize.

French Canadian Class.

Xavier Gautier, Ploughman to John Drummond, Esq.—1st Prize.

Joseph Brulé, Farmer—2nd Prize.

Pierre Lemieux, Farmer—3rd Prize.

John Brookshaw, Ploughman to John Drummond, Esq.—4th Prize.

Young men's Class.

John Kernan, Petite Cote—1st Prize.

Joseph Holdsworth, Petite Cote—2nd Prize.

James McVey certainly deserved encouragement; and we trust that in succeeding years all the competitors in the Boy's class will, even if they do not obtain a prize, obtain something to encourage them.

During the operations of the ploughmen, some young thorough-bred pigs, belonging to the Society, were sold to subscribers residing in the County, upon condition that the pigs should be kept at least two years in the county, and that the service of boars should not be refused to a reasonable number of subscribers, at a charge of 5s for service.

The following prices were obtained:—

A Sow, purchased by F. Quinn, Esq., Longue Pointe, £2 10s; A Sow, purchased by Joseph Laporte, Esq., M.P.P., £2 15s; A Sow, purchased by John McLynn, Cote St. Luc, £2 15s; A Sow, purchased by James Cameron, Montreal, £2 10s; A Boar, purchased by Joseph Deschamps, Montreal, £1 10s; A Boar, purchased by James Allan, Point aux Trembles, £1 12s 6d; A Boar, purchased by Alexander McGibbon, Montreal, 15s.

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Agricultural Show of the County of Gaspe.

PERCÉ, 18*th October*, 1856.

The Cattle Show of the Agricultural Society, No. 1, for the County of Gaspé, took place this day, at Ance-à-Beaufils, on Mr. Tuzo's Farm, pursuant to a printed circular addressed to each of the members. The following gentlemen were present:—

Peter Winter, Esq., President, O. T. Connick, Esq., Sec.-Treas., Messrs. Savage, Baker, Lenfesty, Beck, Cain, Turlong, and Ls. Couture, Directors, most of the Members of the Society and a large number of other persons.

The Judges, appointed by the Directors, were Messrs. Benjamin Fowler, P. Hayden and H. Mahan, who proceeded immediately to the examination and inspection of the cattle, and the following prizes were granted:—

Stallions, aged.

1st prize, Michael Turlong, 40s.

Stallions, 2 years old.

1st prize, Charles Couture, 17s 6d.

Brood Mare with a Foal at her side.

1st price, P. Winter, 25s; 2nd, Thos. Savage, 20s; 3rd, Jas. Lenfestey, Sr., 15s.

Brood Mare having Foaled within the last 2 years.

1st prize, Jas. Cain, 15s; 2nd, Michael Turlong, 12s 6d; 3rd, Jas. Jessopp, 10s.

Draft Horses.

1st prize, Louis Couture, 17s 6d; 2nd, Jas. Cain, 15s; John Beck, 12s 6d.

Fillies, 2 years old.

1st prize, Jeremiah Shannon, 15s; 2nd, Jules Caron, 12s 6d; 3rd, Jas. Couture, 10s.

Colts, 1 year old.

1st prize, Mrs. Bermingham, 12s 6d 2nd, James Jessopp, 10s; 3rd, Michael Turlong, 7s 6d.

Foals.

1st prize, Peter Winter, 10s; 2nd, Thos. Savage, 7s 6d; 3rd, James Lenfestey, Sr., 5s.

Aged Bulls, Imported (Short Horns, Durham and Ayrshire.)

1st prize, Peter Winter, 40s.

Bulls, 2 years old, Alderney.

1st prize, Thomas Savage, 30s.

Bulls, Canadian, aged.

1st prize, Jeremiah Shannon, 20s; 2nd, Thomas Savage, 15s; 3rd, Jules Caron, 10s.

Bulls, Canadian, 1 year old.

1st prize, Philip Dumaresq, 10s; 2nd, Thomas Cain, 7s 6d.

Bulls, 2 years old.

1st James Cain, 15s.

Bull Calves, Canadian.

1st prize, Michael Turlong, 7s 6d; 2nd, James Lenfestey, Jr., 5s 6d; 3rd, James Cain, 4s 6d.

Cows, Imported, 4 years old and over.

(Ayrshire.)—1st prize, Peter Winter, 25s; *(Alderney)* 2nd, Peter Winter, 20s.

Cows, Imported, under 4 years.

(Ayrshire) 1st prize, Peter Winter, 20s; *(Alderney)* 2nd, Thomas Savage, 15s.

Cows, Canadian, aged.

1st prize, John Doherty, 15s; 2nd, John Baker, 12s 6d; 3rd, Thomas Cain, 10s.

Cows, Canadian, under 4 years.

1st prize, Mrs. Bermingham, 12s 6d; 2nd, James Cain, 10s; 3rd, Jerimiah Shannon, 7s 6d.

Heifers, Imported, 2 years to 3 years. (Polled.)

1st Michael Turlong, 17s 6d; 2nd, Thos. Savage, 15s.

Heifers, 3 years, Canadian.

1st prize, John Doherty, 10s; 2nd, James Couture, 7s 6d.

Heifers, Canadian, 2 years old.

1st prize, Jas. Lenfesty, Sen., 10s; 2nd, Michael Turlong, 7s 6d; 3rd, Jas. Jessopp, 5s.

Heifers, Canadian, 1 year.

1st prize, Thomas Savage, 7s 6d; 2nd, Dr. O. T. Connick, 5s 6d; 3rd, Robert Moir, 4s 6d.

Heifers Calves, Canadian.

1st prize, Thomas Savage, 7s 6d; 2nd, Jas. Lenfestey, Jr., 5s; 3rd, James Cain, 3s 9d.

Bull or Heifer Calves from Imported Cows.

1st prize, Peter Winter, 10s; 2nd, Peter Winter, 7s 6d; 3rd, Thos. Savage, 5s.

Rams, Imported, aged.

1st prize, George Moir, 17s 6d; 2nd, Thos. Savage, 15s; 3rd, John Baker, 12s 6d; Michael Turlong, 10s.

Rams, Canadian or mixed.

1st prize, Thos. Cain, 15s; 2nd, Peter Winter, 12s 6d; 3rd, Peter Winter, 10s; 4th, Chas. Savage, 7s 6d.

Rams, Imported, 1 shearling.

1st prize, Dr. O. T. Connick, 12s 6d; 2nd, Jas. Jessopp, 10s; 3rd, Peter Winter, 7s 6d.

Ram Lambs, Imported or not.

1st prize, Thos. Cain, 10s; 2nd, John Baker, 8s; 3rd, John Baker, 6s; 4th, James Lenfestey, 4s.

Ewes, Imported, aged.

1st prize, John Baker, 15s; 2nd, George Moir, 12s 6d; 3rd, George Moir, 10s; 4th, John Baker, 7s 6d.

Ewes, Canadian or mixed, aged.

1st prize, Peter Winter, 12s 6d; 2nd, Peter Winter, 10s; 3rd, Daniel Dumaresq, 7s 5d; 4th, Peter Winter, 5s.

Ewes, Imported, 1 shearling.

1st prize, John Baker, 12s 6d; 2nd, Dr. O. T. Connick, 10s; 3rd, Robt. Moir, 7s 6d; 4th, George Moir, 5s.

Ewe Lambs, Canadian or mixed.

1st prize, James Lenfestey, Jr., 10s; 2nd, do do, 8s; 3rd, do do, 6s; 4th, Peter Winter, 4s.

Fat Wethers.

1st prize, Chas. Savage, 15s; 2nd, Michael Turlong, 12s 6d; 3rd, George Moir, 10s.

Boars, aged, Imported.

1st prize, Thos. Savage, 15s; 2nd, James Cain, 12s 6d.

Sows, aged.

1st prize, Robert Moir, 12s 6d; 2nd, John Doherty, 10s; 3rd, Mrs. Bermingham, 7s 6d; 4th, Thomas Cain, 5s.

Spring Pigs.

1st prize, Thos. Cain, 12s 6d; 2nd, Mrs. Bermingham, 10s; 3rd, Robt. Moir, 7s 6d; 4th, John Doherty, 5s.

Fat Oxen.

1st prize, Jeremiah Shannon, 17s 6d; 2nd, Michael Turlong, 15s; 3rd, John Baker, 12s 6d; 4th, Chas. Savage, 10s.

The following extra prizes were granted:

To Mr. Thomas Savage for an Imported Sow, 12s 6d; to Mr. Thos. Savage, for Imported Pigs, 10s; to Mr. Philip Dumaresq, for a Horse, 25s; to Mr. John Baker, for a Calf, 5s.

P. WINTER, *President.*

O. T. CONNICK, *Sec.-Treas.*

Percé, 23rd Oct., 1856.

P.S.—The Society having reason to believe, that in consequence of the increase and improvement in farm stock generally, which has taken place within the last three years, a large attendance could be expected, thought fit to increase their offer of encouragement in both the number and amounts of prizes. And it is gratifying to be enabled to say, that the expectations of the Society have been fully realized—the last exhibition having proved, in every respect, the very best yet seen in the County of Gaspé—upwards of 200 head of animals being on the ground for competition.

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Agricultural Exhibition of the County of Jacques Cartier.

The first agricultural exhibition of the County of Jacques Cartier, took place on the 25th of September last, at the village of Pointe Claire.—The weather was most agreeable, and there was a considerable number of persons present. The expectations of all were very much surpassed at seeing so many horses and horned cattle. The most remarkable point was the large collection of fine brood mares with their colts. It was particularly remarked that there was not a single bad animal on the ground. Every class of animal was advantageously represented, and reflected very creditably on the county. There is not the least doubt that this exhibition will arouse the parishes of St. Genevieve, Point Claire, St. Anne, and Rigaud—who seem to have heretofore forgotten their local interest, and exhibited at the exhibitions connected with the County of Montreal. Several persons from these parishes exhibited some very fine animals, a proof that there is as much spirit of progress amongst them as among the agriculturists of other counties. — The show of sheep belonging to Mr. Somerville, of Lachine, and of pigs belonging to Mr. Fallon, also of Lachine, very much attracted the attention of amateur agriculturists. At noon, there were the names of 280 competitors entered in the Secretary's book. The judges concluded their labors at 4 P. M., after which the publication of the prizes took place. At the conclusion of the day's labors, all those who felt inclined, sat down to a sumptuous dinner prepared by J. Biron, and all returned satisfied with the occasion.

The following are the names of the successful competitors at the First Annual Exhibition of the County of Jacques Cartier Agricultural Society, held at the Village of La Pointe Claire, on the 25th of September last:—

Draught Stallions.

1st, Charles Valois, £3; 2nd, Basille Groux, £2 10s; 3rd, Jean Bte Lecours, £2.

Stallions Adapted to Propagate a Good Class of Carriage Horses.

1st, Eusebe Viau, £2 10s; 2nd, Prospere Pilon, £2.

Brood Mares.

1st, Louis Dagenais, £2 10s; 2nd, Alex Duff, £2; 3rd, Les Freres de l'Academie Industrielle de St. Laurent, £1 15s; 4th, Patrick Fallon, £1 10s; 5th, Henri Pigeon, £1 5s.

Two Years Old Horse Colts.

1st, Robt Hislop, £1 10s; 2nd, Jean Bte Verdon, £1.

Two Years Old Fillies.

1st, Thos Dawes, £2; 2nd, Adolphe Madord, £1 10s; 3rd, James Somerville, £1.

Aged Bulls.

1st, Thomas Tait, £2; 2nd, Geo Aryell, £1 10s; 3rd, Jean Bte Lacombe, £1.

Bulls of Two Years Old.

1st, Jean Bte Groux, £1 5s; 2nd, Ja Arnett, £1; 3rd, no competitor.

Bulls of One Year Old.

1st, Jas Somerville, £1; 2nd, Peter King, 15s.

Aged Rams.

1st, Jas Somerville, £1 5s; 2nd, Eusebe Viau, £1; 3rd, Louis Gariepy, 15s.

Rams of One Shear.

1st, Benjamin Boyer, £1; 2nd, Joseph Cousineau, 15s.

Aged Boars.

1st, Patrick Fallon, £1 5s; 2nd and 3rd, no competitors.

Boars under Six Months.

1st, Francois Lauzon, £1 5s; 2nd, Thos Dawes, £1; 3rd, James Shields, 15s.

Canadian Cloth.

1st, Onezimie Legault, £1 5s; 2nd, Bazile Groux, £1; 3rd, James Arnett, 15s.

Flannel.

1st, Elie Robillard, £1 5s; 2nd, Wm Boa, £1; 3rd, Guillaume LeCavalier, 15s.

Linen.

1st, Moise D Gorger, £1; 2nd, Jos Dagenais, 15s.

Cows.

1st, Thos Dawes, £2; 2nd, Jas Shiells, £1 10s; 3rd, Patrick Fallon, £1.

Two Years Old Heifers.

1st, Thos Dawes, £1 10s; 2nd, Patrick Fallon, £1 5s; 3rd, Thos Tait, £1.

One Year Old Heifers.

1st, Thos Dawes, £1 10s; 2nd, Patrick Fallon, £1 5s; 3rd, Thos Tait, £1.

One Year Old Heifers.

1st, James Somerville, £1 5s; 2nd, Thos Dawes, £1; 3rd, Thos Hodge, 15s.

Aged Ewes.

1st, James Somerville, £1 5s; 2nd, Wm Boa, £1; 3rd, Patrick Fallon, 15s.

Ewes of One Shear.

1st, Jas Somerville, £1; 2nd, Richard Robertson, 15s.

Sows, with Young.

1st, David Crawford, £1 10s; 2nd, John Taylor, £1 5s; 3rd, Thos Smith, £1.

Pair of Pigs under Six Months.

1st, Alexander Duff, £1; 2nd, Patrick Fallon, 15s; 3rd, Thos Smith, 10s.

Cheese.

1st, James Somerville, £1 10s. No other competitors.

Butter—Firkins 40 lbs.

1st, Peter King, £1 15s; 2nd, Thomas Smith, £1 10s; 3rd, James Hodge, £1 5s; 4th, James Arnett, £1.

Potatoes.

1st, James Somerville, Lachine; 2nd,

James Shields, St. Laurent; 3rd, Patrick Fallon, Lachine; 4th, Thos Dawes, Lachine, 5th Wm Boa, St Laurent, 6th, Thomas Smith, Pointe Claire.

Carrots.

1st, Patrick Fallon, Lachine; 2nd, Thos Dawes, Lachine; 3rd, Wm Boa, St. Laurent; 4th, Thos Smith, Pointe Claire; 5th, Wm Done, do.

Mangold Wurtzel.

1st, James Somerville, Lachine; 2nd, Thomas Dawes, Lachine; 3rd, Patrick Fallon, Lachine; 4th, Thos Smith, Pointe Claire; 5th, Wm. Dow, Lachine.

Indian Corn.

1st, Patrick Fallon, Lachine; 2nd, Jos Dagenais, St Laurent; 3rd, Archibald McNaughton, Lachine; 4th, Wm Boa, St Laurent; 5th, James Somerville, Lachine; 6th, Wm Hodges, St Laurent.

Horse Beans.

1st, Patrick Fallon, Lachine; 2nd, Thos Smith, Pointe Claire; 3rd, Wm Dow, Lachine.

Turnips.

1st, Thomas Dawes, Lachine; 2nd, William, Boa, St. Laurent; 3rd, Alexander Duff, Lachine.

Summer Fallow.

1st, Jean Bte Lecouss—No other competitor.

Best Surface Drained Farms.

1st Patrick Fallon, Lachine; 2nd, Thos Smith, Pointe Claire.

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Neighbour Dumpdirt's Dairy.

MR EDITOR:—As I sometimes write a little for the papers for recreation, I propose to furnish you with an account of the dairy of my neighbour Dumpdirt, knowing that he can never find time to favor you with an account of it himself.

You have probably seen my neighbour Dumpdirt somewhere, most likely on the way to market, for he is there more than anywhere else, for he goes often and is a long time about it. Not that his farm produces more than his neighbour's, but I have thought it was because he took so much pleasure in marketing; and thus when his wife churns or the children finds a hen's nest, he harnesses up his old hammer-head horse and commences to work his passage to Donklin Falls.

But it is not with Dumpdirt or his horse that I have to do now, but his dairy; and to begin at the beginning, Mr. Dumpdirt has four cows—the oldest the mother of the others. During the winter they are fed on straw and poor hay, for Dumpdirt thinks that feed good enough for cows that don't give much milk, and he don't want them to give much milk in the winter, for he has a theory that they will not give so much in the summer if they do. He will not raise turnips for his cows, for the butter will taste of them; he will not raise carrots, because it takes so much time in haying to weed them, and beets rust and do not come to much.

Under these circumstances, it cannot be expected that Dumpdirt's cows should come out in the spring as fat as others that are kept without regard to expense or profit. And they do not give so much milk when they calve, to be sure, but then "there is no great loss without some small gain"—it saves the trouble of milking and taking care of what milk the calves would leave, and it is about impossible to get the girls to milk in the tie-up, for they declare it to be too dirty for the hogs.

But soon after they are "turned out" they begin to "give down," for they have the range of the whole farm. As soon as the calves feel the benefit of the increase of milk enough to make them saleable, they are disposed of by having their heads cut off, and being dressed as well as Dumpdirt knows how, and carried to market.

Then Mrs. Dumpdirt begins to make her butter. The oldest of the children at home are girls, and they do the milking if Ben gets the cows at night, and if they do not get hungry and get out of the yard and "go to grass" before the girls are up in the morning. Sometimes they get out of the pasture and go away, and their bags do not ache enough to induce them to go home, and they "lay out." But Mr. Dumpdirt thinks it does them good to "lay out" a night or two in the spring, for it stretches their bags, and they are not likely to leak their milk.

Now Dumpdirt's barnyard is not the cleanest that ever was, and the girls are so hurried to get through with the despised job of milking that they cannot stop to clean the cows, and it *is* rather discouraging work when no pains is taken to keep the yard clean. Some of this dirt finds its way into the milk-pail, and when it rains the water drops from the cow's sides into it also, and perhaps improves the color of the butter if not the flavor. But the Dumpdirt girls have a theory which they have learned from their parents, that it is the lot of every mortal to eat one peck of dirt during their life, and they think it makes no difference how soon they eat it, provided they do not know it at the time.

The heifer milks rather hard, and the girls have agreed that the one who gets her first cow done first shall have her choice of the other two, and the consequence is that the two first cows are not always "stripped" as they should be.

After milking, the milk is taken to the kitchen. The pans have been washed the day previous, and set up edgewise against the house to dry in the sun. The chickens run at large on the premises, and they run from the dough-dish and the swill-tub to the milk-pans, to catch flies. The chickens catching flies in the milk-pans, has nothing to do with making butter, but I mention it to show that one branch of business chimes in with another at Mr. Dumpdirt's. The chickens thrive, and the flies are destroyed.

The milk is strained and carried to the cellar, but Mr. Dumpdirt's cellar needs description, or the peculiar flavor of some butter could never be accounted for.

The drain, if there ever was any, is filled up by the rats, and as a consequence there is some water in the cellar the most of the year. To prevent wetting their feet, the "women folks" have carried down pieces of board, little and large, to step on. They have lain rotting in the stagnant water for years, and with other "culch" mixed among them. Then there is an old pork barrel, a beef barrel half full of brine, a soapbarrel, a vinegar barrel, a cider barrel, and a dozen other barrels, many of them falling to pieces. Time would fail to tell of the firkins, pots and boxes, and bushels of decayed and growing vegetables and other stuff that are scattered around. The cellar windows, or rather the place where the windows ought to be, are filled with a row of little stakes driven into the ground outside, but notwithstanding all this precaution, the cats (and there are many) will creep in and skim the milk a little sometimes.

As the milk is needed for the pigs, it is skimmed and the cream put in an earthen pot which stands under the stairs.

Mrs. Dumpdirt uses the dasher churn, and when not in use, it is kept on the woodpile, laying on its side, to prevent its filling when a shower comes. The other morning I was over there to get an axe lent to my neighbor, and the kittens were playing "hide and seek" in the churn. I do not mention it to show that Mr. Dumpdirt is dependent on me for any tools, but to account for the hairs that are sometimes found in the butter. It cannot be expected that butter will be *perfectly* clean when profit is an object in its manufacture, for too much time spent upon it would make it cost more than it would come to.

When the cream pot is full the churn is brought in, and, if it leaks, hot water is poured in until it is tight. The water is then poured out and the cream poured in. Then comes the tedious work of churning with a dash churn, having no idea how long it will take. And for some reason or other Mrs. Dumpdirt's butter is rather uncertain about coming. If it comes in half a day or less, "well and good; if not, she pours in cold water. Then if it does not come in a few hours she pours in hot water. If it does not come by night, she is sure it is bewitched, and tries various charms to break the spell, one of which is to heat a silver half dollar and drop it into the churn. Mrs. Dumpdirt is a firm believer in witches, and she often relates as positive proof of her belief, that once she was heating a half dollar in the fire, and all at once it disappeared, and she "never could find hide nor hair of it."

If the butter comes out, and it generally does after a while, it is taken out by hand and put into a pan of cold water, worked over and salted to the taste, and the balls made up by hand, and put into the butter-box, and it is ready for the market.

Mrs. Dumpdirt thinks butter ought to be salted as much as it will bear, for it keeps sweeter, weighs more, and lasts longer.

I have thus, Mr. Editor, given you some of the particulars of Mr. Dumpdirt's dairying. I do not say his ways of working it are all the best. Indeed, my own method and that of most of my farmer acquaintances are very different, though it costs a great deal of care and painstaking.

"If a thing is worth doing at all, it is worth doing well," is a rule my uncle Grisley often repeated to me when I was his plow-boy, and now I am my own man, I find the saying verified in most cases. But many persons hold the opposite, at least in practice, and being liable to err ourselves we are bound to respect their opinions.

GOOSEQUILL GRAY.

Charlestown July, 1856.

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Bones as a Manure.

MESSRS. EDITORS—So much has been published within the past few years on bones, phosphates, and super-phosphates, that it would seem the subject had become thread bare, and that nothing new could be written, and that every farmer was fully apprized of their manurial value. But one need not take a very extensive ramble among our farmers to ascertain the fact, that but very few of them either save or collect what old bones are readily within their reach, or that might be cheaply purchased in many country towns at the slaughter-houses, tanneries, and soap-boilers; and some, who are aware of their value as manure, neglect them from their indestructible nature, when used in their natural state, and the difficulty of disintegrating or dissolving them, so as to realize any immediate benefit from their application to their crops. The more finely bone manure is comminuted, the more speedy its action; but when only coarsely broken by the l edge, or other heavy hammer, and the land heavily dressed with the broken bones—at the rate of 150 bushels per acre—I have found them a most efficient and durable dressing for the land—in durability exceeding any other material used.

Within the past twenty years I have experimented much with bones for manure; but have found much difficulty in reducing them to a fine state, so as to render them more immediately available. Some years ago I boiled a few bushels in a strong lye of salphate of potash. Two hours boiling would reduce horn-piths to a pulp. Large solid bones required boiling an hour or two longer. In boiling in sulphate of potash, I think there was not so much loss of the ammonia, as it probably was fixed by the sulphuric acid, forming sulphate of ammonia. Afterwards I boiled a quantity of bones in strong caustic lye. This process drove off the ammonia, filling the house from cellar to garret with an oder of ammonia, as powerful as that of the hold of a guano ship. As far as the organic portion of the bones was concerned (in this process) they might about as well have been burned.

Several years ago I burned a cartload of horn-piths and other bones. After being burned they were easily pulverized. A few days before using them, they were mixed with domp unleached ashes. By the process of burning, probably, I suffered a loss of one-half the manurial value of the bones.

A year ago last spring I purchased at a tannery, three large cart loads of horn-piths (for which I paid $5.) About half a cart load of the piths were cut and broken with an axe. They were boiled in water for an hour or two, and then composted—first, a layer of swamp-muck, then a layer of "boiling hot bones" and ashes—so on till the heap was completed—being about two cart loads. The boiler would hold about four bushels; each time the bones were taken from the boiler, the hot water was thrown on to the compost heap. In this situation the mass remained from June till October, when it was carted on to wheat stubble, and applied in about the same quantity as was good manure from under my dung shed. The land was soon plowed. In May last, the land was again manured and plowed, and planted with corn. The portion of the field which recieved the two loads of compost, is decidedly the best, though the whole field is a number one piece of corn. It was, however, much injured some ten days ago, by the wind and rain—the out-skirts of a terrific hail storm that passed just north of my place. Some of the piths, when carted out last fall, were as sound as when on the cattle's head—others were easily crushed in the hand. I presume the boiling dissolved much of the gelatine, and another portion was decomposed in the compost heap, thus forming a good amount of ammonia—both "actual and potential." This was readily soluble, immediately available to the plants—which caused them to throw out from sixteen to twenty suckers from each hill, leaves and ears to correspond.

Last winter I tried to disintegrate half a cart load of piths in fermenting horse manure, as recommended by Dr. Gibbs. The bones and manure were placed in alternate layers. In the spring, found the piths sound and fresh, and the manure badly firefanged; perhaps if they had been boiled, or soaked in water for a few days previous to placing them in the manure, the experiment would have been more favorable.

In May last I planted a piece of inverted sward land with potatoes—used none other than concentrated manures—two rows with guano—hen-dung—an artificially prepared manure from old boots, shoes and scraps of leather—a horn-pith to each hill—tongues and sounds, &c., &c. The rows having a horn-pith to each hill, now, are altogether the best—I mean the tops. The difference can be seee nearly half a mile. If the potatoes turn out in proportion to the tops, horn-piths will prove a most valuable manure for the potato crop. I presume the same piths may be used for that purpose for twenty or thirty years, and then be most as good as new. I cannot tell what the "tongues and sounds" would have done, for about the time the potatoes were coming up, all the dogs for two miles round congregated in my potato patch, and dug up every hill, root and branch, where the fish manure was applied.

Some ten years ago, a bone-button manufacturer sent me several barrels of bone saw-dust to experiment with. A tablespoonfull of the fine dust to the hill, at the time of planting my potatoes, just doubled the crop. A bushel of potatoes, where the bone was applied, could be dug as quickly as half a bushel could be in the rows that had none.

In the spring of 1837, I applied to a piece of land, that the previous year was planted with Swedish turnip, at the rate of 150 bushels of broken bones per acre. They were plowed in deeply, and the land was sown with five pounds of Lucern (French clover). In the course of three years the other grasses eradicated the lucern; but the other grasses produced at the rate of three tons of hay per acre for several years. Then the ground was plowed, and sown with wheat and tall-meadow oat grass seed, (and by the way, I will here just give it as my humble opinion, that the *out grass* is unworthy of cultivation, either for hay or pasture.) I had a fair crop of wheat, and for several years the oat grass stood, when headed out, at least five feet high, and as handsome as a field of grain. But, Mr. Editor, you and I have lived long enough to know that appearances are sometimes deceptive, and this was the case with the oat grass.

In the spring of 1853, I carted on to this oat grass strip of land, and also a strip each side of it, at the rate of twenty-five cart loads of green manure, taken from under my dung shed. This was evenly spread, and with a good plow turned under to the depth of six to eight inches, rolled, harrowed, and planted with potatoes—a very good crop, but the boned portion altogether the best. In the spring of 1854, the ground was prepared for sowing by the use of the cultivator and harrow—sown with oats and clover seed—a very dry season. The oats were good on the boned part of the field; the other portions very light. The first of September, after the oats were off, the whole was alike manured, and sown with the white flint winter wheat. The land being rather flat and wet, it was thrown into ridges. The result was, that but very little of it was winter killed, and I had a prime crop, especially that upon the *boned part;* this, at harvest, stood upon an average four and a half feet high, having neither midge, rust, or mildew. It was my intention to have underdrained the land last autumn, but other labours prevented. On that portion of the field that received the bones seventeen years ago,

there was this year a most luxurant crop of red clover and honey suckle, while on the strips each side, it was mostly sorrel, with here and there a straggling bunch of clover. The great difference in the crops on the different parts of the land, is unquestionably due to the heavy dressing of broken bone put on seventeen years ago—and seventeen years hence their lasting and beneficial action will doubtless be plainly seen.

From the facts adduced in this paper, I think it must be for the interest of every farmer to collect all the bones within his reach. If they could be ground, or made into super-phosphate, they would act more speedily; but in the absence of bone-mills and sulphuric acid, they are richly worth saving. Break them up as fine as you can with an old axe, and apply them to a loamy soil, and you will be manuring your land for yourself, children, and grand-children, if they are wise enough to keep the old family homestead.

But in addition to an increase of crops, by the use of bone manure, there is another important consideration connected with this subject,viz: the health and thrift of our cattle. For lack of phosphates in the grasses of the pastures and mowing fields of a large portion of the old and long grazed and cultivated farms of New-England, our cattle are afflicted with the "bone disease." At some future time I may have something to say upon this subject through the columns of the Country Gentleman. LEVI BARTLETT, *Warner, N. H., Aug. 20th*, 1856.

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Fodder Corn.

I have observed frequent references in the *New England Farmer* to an article which I thus denominate, but as all I have seen appear to have been from men who were inquiring, rather than of those who have made full experiments in the business of growing this kind of fodder, I have been induced to forward the following communition, which is the result of about fifteen years experience.

I began with common corn in drills three feet apart, and let it stand much too long, so that I had a large supply of hard stalks which were useless for fodder. After sundry trials, I at length came to the following results and adopted the following rules.

1. Any kind of land which is suitable for corn, is good for the crop in question. If it is rich, the growth will be so much more rapid and luxuriant, but you may get a good crop on land of moderate fertility.

2. My time of sowing or planting is at any period from early spring, to the middle of August. If at the latest period, your land should be in good condition, and you will have a growth sufficient for the best kind of fodder by the time of the earliest frosts. And if it gets some slight nipping it is not fatal, but the sooner it is then cut the better. I have, however, let patches stand till the middle of November, when the top leaves were faded and dry. But the body of the stalks were still good, and I had rather have them to feed out to milch cows than good hay as a part of their food.

3. *On planting in drills or sowing broadcast.* The drill system is the best for weedy land, on account of the advantage of hoeing, which requires but little labor if it is done in season. All undergrowth will soon be overtopped on my mode of cultivation. When I go for drills, eighteen inches apart is an ample width. I have gone down to twelve, but this is too narrow, unless your land is very rich. The abundance of roots will be too much cramped, to produce a sufficient growth of blades. In the drill system you have this advantage; with a sickle or hand scythe you can cut down the rows in a rapid manner, and prepare for curing and binding very easily. On this plan the corn is dropped like peas,—the average distance should be about three inches.

When I sow the corn broadcast, four bushels to the acre is my general rule. If the kernels are large more seed should be used. Like small grain for fodder, I have found the more that will grow well, the better it is for feeding.

4. *The best kind of seed.* My rule is to look out for the best flat corn I can find, and avoid by all means that which has been swelled on the voyage, as much of it will not come up. In former years I found the Maryland corn was better than that which came from farther south. The kernels, however, are generally large, so that fewer plants will be obtained from a bushel. For a few I years past have sought for the yellow western corn, that comes by the way of the lakes. The kernels are of moderate size, and pretty sure to vegetate if it comes direct.

5. *Sweet corn for fodder.* This I have often used, and find it very good, but still I cannot recommend it in preference to the gourd seed kind, as it is called. The yield is much less. It no doubt contains more saccharine matter, and is more delicious to the taste of cattle, and it is well enough to use it in a small way, but a full foliage is easiest obtained from southern or western seed. Cattle are fond enough of that, green or dry.

6. *The proper time to cut this fodder.* In my early experiments I was very apt to let it stand too long, so that I lost, in the hardening of the under growth, what I gained in the upper, so that I now cut it so early that most of the stalks will be eaten, especially by the aid of a cutter. But still if a portion of them are left for litter, you will get more substantial fodder from the same ground than from dry small grain, minus the leavings.

Corn in drills on good land may be cropped once or twice, according to the luxuriance of its growth before the final cutting. Where a man has but a cow or two, these croppings will aid very much the supply of food, and the yield of milk. The way this is done is to grasp a handful of the tops, and take them off with a stroke, but be careful not to go down too far. In a few weeks, where the plants are in vigorous growth the leaves will have attained their former height. Half a bushel of these leaves pressed down by hand, are a good mess for a cow instead of meal.

7. *How to manage the broadcast sowing.* I prepare the ground the same as for oats and millet. It should be levelled with a harrow, to secure uniformity in the disposition of the seed. But so different is this sowing from that of other grain, that a good sower will often find it difficult to spread it even as he travels on. This deficiency may be remedied by one who has no sowing skill following after, and supplying the thin places, as they can be easily seen. The covering may be done by a tooth harrow and a brush. But I think the better way is to use the tooth harrow twice in different directions, and finish with a roller. This prepares the ground for the scythe.

8. *On the curing of corn fodder.* This is the most difficult part of the whole operation. Millet is a hard thing to cure, but this kind of fodder is much harder, as the stalks are much larger, and full of juice. In my early experiments I carted it out on to grass land, principally to avoid the grit which would adhere to the leaves in case of rain. But this practice I long since abandoned, and let the crop remain where it grew. The grit will all fall off by handling, and I found the making will not go on so fast on grass, as the dry soil. A few good sunny days will prepare the fodder for being gathered into a smaller compass. That which comes from drills must be gathered into bundles or sheaves, and be opened and turned as long as is needful. It is a good plan as soon as you loose, after cutting, to bind up the article into bundles of any size, and carry it home to barns or sheds, or wherever it can be safe from rain, and then open it and stand it up around, or spread it on poles or any platform where the air can circulate underneath. No matter about the sun in this position; the moisture, the great trouble to be overcome, will gradually evaporate, and the whole may be packed away safely for any length of time. In this way the brightest and best fodder is obtained. The bundles left on the ground may be shocked up like top stalks, but special care should be taken in binding and capping the shocks, to guard against any water getting down into the bundles, for so solid are they when bound, that it will not run through, and the moisture about the bands will remain to the injury of the fodder. Were it not for the extra labor of dropping the seed in the drills, I should always follow this system, as more fodder can be got from the same ground and it is more conveniently handled through every process. In the making of this fodder which has been mowed the same process may be followed as with clover, only it takes longer time. After two days' sun

it should be put in heaps of moderate size, to stand for a few days. At every opening and putting up, the heaps may be made larger, till they are young stacks, and then they may be left at discretion as to time. But as the mass is very porous the heaps should be well covered with green cuttings or any thing else.

Thus far I have had respect to small operations in the fodder line, to the doings of those who have but little land or stock. To such I would recommend to employ every spare patch on their premises in growing the fodder in question, to be used green or dry; to plant the seed in every nook and corner, and particularly on head lands and in outside rows instead of potatoes, which in such situations generally do but little, but the roots of the corn here will extend outward and make vigorous plants. A good late crop of my favorite article may be obtained immediately after oats which are cut early for fodder, with a slight dressing with guano or ashes or some vigorous manure.

9. *Corn fodder compared with good hay for making milk.* I have often tried the experiment, with a result in favor of the former. But many say we will plant our land with our corn in our old way, and then we get the grain and fodder too. This is true, but the fodder is far inferior and but about one-tenth as much. And besides, a good growth of fodder may be had on land, where there would be but a meagre yield of corn.

10. *Green corn stalks are injurious to milch cows.* This idea was referred to by a writer in the *Farmer* last year. Although this old tradition has been nullified by all my experience, yet to get the opinion of others I inquired of a milk man for *his* experience in his business. His answer was to this effect: "I grow a large amount of sweet corn on purpose for my cows, and begin to feed it out as soon as it will do to cut, and continue to, so long as it continues green, and I plant at different times. This practice I have continued for years, in face of the old notion of drying up the milk. To test this question," continued he, "let a cow break into a field of green corn, when of course she will eat all she wants, but who ever found she gave less milk for it? Instead of any injury from green corn fodder for my cows, I consider it among the best articles I can get for soil feeding, and for helping out my short pastures in dry times."

Farmers who have an ample supply of mowing lands have less inducement to go for this fodder, but even in that case, they will see their account in it in part at least, for their cows, green or dry. From no grain can so much per acre be obtained.

11. *Corn fodder for horses.* Through all the south and west, where grass does not grow naturally as with us, *corn blades*, as the leaves are called, constitute the principal fodder for horses, as well as other stock. These leaves are stripped off when green, and cured and done up much as top stocks are managed with us. In seasons when the grass crop will evidently be short, much may be done to help the deficiency by the sowing of corn, which may be done after it is certain the failure will take place. But where I can have my choice I get this fodder ready for cutting while the sun shines with full power, as the making of it is attended with more ease and less hazard.

AGRICOLA.

——:o:——

AN AYRSHIRE COW.—This breed of cattle has become a favorite one with amateurs, and it is probable that by careful feeding and attention, the largest products of the cow have been developed. These are sometimes surprising. In Middlesex county, we believe, premiums have been paid for butter made from an Ayrshire cow where the product amounted to eighteen pounds per week, and the butter of the very best quality. In other counties in this State, and in other States, we have noticed similar returns.

Mr. Aiton, in his "Treatise on the Dairy Breed of Cows," thus describes the Ayrshire cattle;—"The shapes most approved are—head small, but rather long and narrow at the muzzle; the eye small, but smart and lively; the horns small, clear, crooked, and their roots at considerable distance from each other; neck long and slender, tapering toward the head, with no loose skin below; shoulders thin; fore-quarters thin; hind-quarters large; back straight, broad behind, the joints rather loose and open; carcass deep, and pelvis capacious, and wide over the hips, with round, fleshy buttocks; tail long and small; legs small and short, with firm joints; udder capacious, broad and square, stretching forward, and neither fleshy, low-hung, nor loose; the milk veins large and prominent, teats short, all pointing outward, and at considerable distance from each other; skin thin and loose; hair soft and woolly. The head, bones, horns, and all parts of least value, small; and the general figure compact and well proportioned." Mr. Rankin very properly remarks, that, "compared with other improved breeds, the thighs, or what is called the twist of the Ayrshire cow, are thin. She is, characteristically, not a fleshy animal."

The Ayrshire farmers prefer their dairy-bulls, according to the feminine aspect of their heads and necks; and wish them not round behind, but broad at the hook-bones and hips, and full in the flanks. Experience, dearly bought, led to this, for the consequence of the crossing of the small native breeds with the heavy cattle imported from the south, was a bony, ill-shaped animal, not much improved as a milker, and its disposition to fat lamentably decreased; it may, however, demand consideration whether the round and compact form of the West Highlander and the Galloway have not been too much sacrificed, and even the defects of the short-horn needlessly perpetuated.

Mr. Aiton says:—"The qualities of a cow are of great importance. Tameness and docility of temper greatly enhance the value of a milch cow. Some degree of life and spirit, are qualities to be wished for in a dairy cow, and what those of Ayrshire generally possess. The most valuable quality which a dairy cow can possess is, that she yields much milk, and that of an oily, or butyraceous, or caseous nature, and that after she has yielded very large quantities of milk for several years, she shall be as valuable for beef as any other breed of cows known; her fat shall be much more mixed through the whole flesh, and she shall fatten faster than any other." This is high praise, if it can be truly affirmed of the Ayrshire cattle; we are anxious to know the origin, the history, and the general management of this valuable animal.

The origin of the Ayrshire cow is even at the present day, a matter of dispute; all that is certainly known is, that a century ago, there was no such breed in Cunningham, or Ayrshire, or Scotland. Did the Ayrshire cattle arise entirely from a careful selection of the best native breed? If they did, it is a circumstance unparalleled in the history of agriculture. The native breed may be ameliorated by careful selection; its value may be incalculably increased, some good qualities—some of its best qualities—may be for the first time developed; but yet, there will be some resemblance to the original stock, and the more we examine the animal, the more clearly we can trace out the characteristic points of the ancestor, although every one of them improved.

——:o:——

Swallows against Flies.

While on a late visit to a friend's residence in the country, we were most agreeably surprised at finding an unusual scarcity of flies, mosquitoes and the whole tribe of winged nuisances which have there in years past warred against peace and comfort of both bipeds and quadrupeds. The change was readily accounted for upon learning the following facts:—

Last May, about one hundred and fifty swallows one morning made their appearance and commenced building their nest under the eaves of a long new barn. As soon as their operations were discovered a cleat was nailed along the boards, which was painted, and thus better facilities afforded the swallows for attaching their nests. Thus encouraged, the whole feathered company at once set to nest building, and in three weeks' time, between seventy and eighty of these mud fabrics were completed; and in about one month more, each of these was occupied by from three to six tenants. Your readers can easily conceive of the immense sacrifice of insect life required to feed such a numerous company. The result has been as before stated. Add to this, the joyous warbling from these feathered songsters, and what a contribution of pleasure and comfort!

To legislatures in general and the whole

community in particular, we say, encourage bird raising. Don't suffer wanton sportsmen to enter your fields, and prey upon these friends of man and beast. Show your regard for your own and the welfare of the community by sparing the birds.--*Traveller.*

——:o:——

MONTREAL MARKET PRICES.

Rates at which produce is purchased from the Farmers.

28th Nov., 1856.

Hay from 10 to $11½ per 100 bundles.
Straw from 4 to $5. do.
Fresh Butter, per lb. from 1s 2d to 1s 3d.
Salt Butter, do from 10d to 11d.
Country Cheese, from 6d to 8d.
Wheat, none offered.
Barley, 2s 6d to 4s.
Rye, none.
Oats, from 1s 11d to 2s.
Yellow Indian Corn, from 3s 9d to 4s.
Indian Corn, (Ohio) none.
Buckwheat, from 2s 9d to 3s.
Peas, from 3s 6d to 3s 9d.
Beef, per 100 lbs, from $5 to 8.
Pork, $9 to $10 per 100 lbs.
Mutton, per lb., from 5d to 7d.
Veal, 6d to 7½d.
Eggs, 1s 2d to 1s 3d.
Honey, per lb. 7½d to 8d.

VALUABLE TEXT BOOKS.

FOR SALE BY THE SUBSCRIBER.

(*Can be sent by post on receipt of money or postage stamps.*)

	£	s.	d.
Norton's Scientific Agriculturist,	0	3	9
Johnston's Agricultural Chemistry,	0	6	3
Comstock's Philosophy, Lardner's Notes, 3 vols,	1	5	0
Do. Abridged Edition,	0	3	9
Comstock's Chemistry,	0	5	0
Lyell's Elements of Geology,	0	10	0
Chamber's Elementary Geology, by Page,	0	4	0
Acadian Geology, by J. W. Dawson, F.G.S., with a Mapof the Province,	0	10	0
Comstock's Geology,	0	5	0
Nicol's Manual of Mineralogy,	0	8	9
Comstock's Mineralogy,	0	3	9
Agassiz and Gould's Zoology,	0	5	0
Chamber's Zoology,	0	5	0
Gray's Botanical Text Book,	0	10	0
Comstock's Botany,	0	5	0
Miller's Hydrostatics,	0	9	0
Newton's Principia,	0	9	0
Griffin's Dynamics,	0	10	0
Todhunter's Conic Sections,	0	15	0
Griffin's Optics,	0	12	0
Todhunter's Plane Co-Ordinate Geometry,	0	15	0
Todhunter's Analytical Statics,	0	15	0
Hall's Differential and Integral Calculus,	0	12	6
Wood's Algebra,	0	18	9
Hymer's Elements of Astronomy,	1	0	0

And all the Latin and Greek Classics used in Colleges and High Schools.

HEW RAMSAY.

JUST PUBLISHED, FOR 1857.

THE ILLUSTRATED ANNUAL REGISTER of RURAL AFFAIRS and CULTIVATOR'S ALMANAC for 1857. 288 pages. Embellished with ONE HUNDRED AND FIFTY ENGRAVINGS. Price 1s 3d.

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Cider Mills	2
Drilling Machines	2
Dwarf Pear Tree	1
Feed Mixer	1
Fruit Culture	10
Grain Binder's Wheel Rake	1
Harrows	4
Horse Pitchfork	1
Hay Press,	1
Laying Out Farms	7
Log House	1
Mowing Machines	2
Mice Gnawed Trees	3
One Story Farm House	4
Ox Yoke	1
Ornamental Plants	12
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Notice to Farmers.

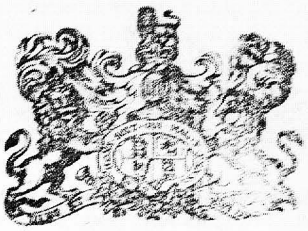
THE MUTUAL FIRE INSURANCE COMPANY of the COUNTY OF MONTREAL, insures the properties of farmers, in Lower Canada, at 5s. for £100 currency, for 3 years, &c.

Apply at the office, *St. Sacrament Street*, Montreal; to the Agents in the Country; or to the undersigned Directors:—

Wm. Macdonald,	Esq.,	President, Lachine.
B. H. Le Moine,	"	Montreal.
Edward Quin,	"	Longue Pointe.
F. M. Valois,	"	Pointe Claire.
John Dods,	"	Petite Cote.
G. G. Gaucher,	"	Ste. Genevieve.
Frs. Quenneville,	"	St. Laurent.
Joseph Laporte,	"	Pointe-aux-Trembles.

P. L. LE TOURNEUX,
Secretary and Treasurer.

Montreal, 1st July, 1854.



CROWN LANDS DEPARTMENT,
Toronto, 5th November, 1856.

NOTICE is hereby given that the undermentioned Crown Lands in the Township of Bungay, in County of Kamouraska, L. C., will be open for sale to actual settlers, on and after the TENTH day of DECEMBER next, on application to FLORENCE DEGUISE, Esquire, the Local Agent, at Ste. Anne de la Pocatiere, in said County, on the following terms, viz:

The price to be One Shilling and six pence per acre, payable in five equal annual instalments, with interest; the first instalment to be paid upon receiving authority to enter upon the land,—actual occupation to be immediate and continuous,—the land to be cleared at the rate of two acres annually for each hundred acres during the first five years,—a dwelling house, at least sixteen feet by eighteen feet, to be erected,—the timber to be reserved until the land has been paid for in full and patented, and to be subject to any general timber duty thereafter,—a license of occupation, not assignable without permission,—the Sale and License of occupation to become null and void in case of neglect or violation of any of the conditions,—the settler to be entitled to obtain a Patent upon complying with all the conditions,—not more than two hundred acres to be sold to any one person.

TOWNSHIP OF BUNGAY.

1st Range.

Lot 1 (74 acres), 2 (71), 3 (67), 4 (65), 5 (62), 6 (58), 7 (55), 8 (52), 9 (48), 10 (46), 11 (43), 12 (39), 13 (36), 14 (32), 15 (29), 16 (27), 17 (99).

2d Range.

Lots 1 to 24 inc. (100 acres each), 25 (97), 26 (93), 27 (90), 28 (87), 29 (85), 30 (81), 31 (78), 32 (75), 33 (72), 34 (68), 35 (66), 36 (84).

3rd Range.

Lots 1 to 8 incl. (100 acres each), 9 (95), 10 (87), 11 (85), 12 (90), 13 to 35 incl. (100 acres each), 36 (168).

4th Range.

Lots 1 to 8 incl. (100 acres each), 9 (95), 10 (87), 11 (85), 12 (71), 13 to 36 incl. (100 each), 37 (105), 38 (107), 39 (105), 40 (104), 41 (101), 42 (99), 43 (97), 44 (94), 45 (92), 46 (65).

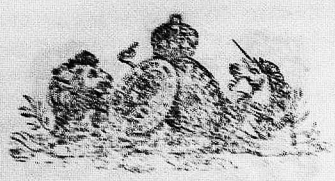
5th Range.

Lots 1 to 10 incl. (100 acres each), 11 (97), 12 (93), 13 (91), 14 (92), 15 (88), 16 to 45 incl. (100 each), 46 (66). 3 ins.

Printing and Bookbinding.

THE undersigned executes with neatness and despatch, and at moderate prices, all kinds of PRINTING, such as, BOOKS, CATALOGUES, PRIZE LISTS, CARDS for CATTLE SHOWS, &c. —ALSO— BOOKBINDING, either Printed Books, or Merchants Ledgers, Journals, &c.

H. RAMSAY.



BUREAU OF AGRICULTURAL STATISTICS,
25th July, 1856.

TO EMIGRANTS AND OTHERS SEEKING

LANDS FOR SETTLEMENT.

The PROVINCIAL GOVERNMENT have recently opened out THREE GREAT LINES OF ROAD, now in course of completion, and have surveyed and laid out for Settlement the Lands, through, and in the vicinity of which those Roads pass.

The Roads, as advertised by the Agents of the Government, appointed to the respective localities to afford information to the Settler, are known as "THE OTTAWA AND OPEONGO ROAD," THE ADDINGTON ROAD and "THE HASTINGS ROAD."

The Ottawa and Opeongo Road

Commences at a point on the Ottawa River, known as "Ferrall's", a little above the mouth of the Bonchere River, and runs in a Westerly direction, passing through the northerly part of the County of Renfrew.

It is intended to connect this road with a projected line of road known as "Bell's Line" (leading to the Lake Muskako, and Lake Huron, by a branch which will diverge from the Opeongo Road in the Township of Brudnell, at a distance of about 53 miles from the River Ottawa, forming with "Bell's Line," a great leading road, or base line from the Ottawa to Lake Muskako, 171 miles in length, passing through the heart of the Ottawa and Huron Territory, and opening up for settlement a vast extent of rich and valuable land.

This road, and the country through which it passes, now open for settlement, is easily accessible, and the Agent for the granting of Lands in this district is Mr. T. P. French, who resides at Mount St. Patrick, near Renfrew, on the Opeongo Road, a few miles from the Lands which are to be granted. To reach the section of Country under Mr. French's charge the Settler must go from MONTREAL up to the Ottawa River to a place called Bonchere Point, and thence by land come twenty-five or thirty miles westward to the Township of Grattan, in which Mount St. Patrick is situated.

The Addington Road

Commencing in the Townships of Anglesea, in the northern part of the county of Addington near the Village of Flints Mills, in Kaladar, runs almost due north to the River Madawaska, a distance of 35 miles—and is to be continued thence for the distance of 25 miles till it intersects the Ottawa and Opeongo Road.

The Agent for the granting of the Land in this district is Mr. E. Perry, who, for that purpose, is now resident at the Village of FLINTS MILLS. The outlines of five townships of very superior land are already surveyed and ready for Settlement within the limits of the Agency, lying north of Lake Massanoka. and between it and the River Madawaska. The Townships aro called respectively Abinger, Denbigh, Ashley, Effingham, Anglesea, and Barrie.

The direct route to this Section is by way of KINGSTON, Canada West, thence to NAPANEE, either by land or Steamboat. and thence Noth to the Township of Kaladar, and the Village of FLINTS MILLS where Mr. Perry resides.

The Hastings Road

Almost paralled to the Addington Road, and at a distance West from it of about 32 miles is the HASTINGS ROAD. This Road beginning at the northern part of the County of Hastings, and running a distance of 74 miles, almost due north, also intersects the OTTAWA AND OPEONGO ROAD and its extensions.

The Government Agent is Mr. M. P. Hayes, who resides at the Village of Hastings, lately called Madoc, about 28 miles north of the Town of Belleville. The Road between these places is in good order—The land to be granted by the Crown under this Agency extends from 15 to 70 miles north of the Village of Hastings. The Road through this large extent of land is passable for 40 miles, and money is now being expended to extend it 30 miles further, so that Settlers can get in and out without difficulty, and find a good market for surplus produce, as well as convenient facilities for bringing in whatever supplies they may require—abundance of which can be had at the Village of Hastings, where the Government Agent resides.

The direct way to reach this Section, which is easily accessible, is by KINGSTON, Canada West, thence by Steamboat up the Bay of Quinte to BELLEVILLE, 56 miles—and thence by a good Road to HASTINGS, 28 miles.

In order to facilitate the Settlement of the Country and provide for keeping in repair the Roads thus opened: the Government has authorized Free Grants of Land along these Roads, not to exceed in each case ONE HUNDRED ACRES, upon application to the Local Agents, and upon the following

CONDITIONS:

That the Settler be eighteen years of age.

That he take possession of the Land allotted to him within one month, and put in a state of cultivation at least twelve acres of the land in the course of four years,—build a house (at least 20 by 18 feet) and reside on the lot until the conditions of settlement are duly performed; after which accomplishment only shall the settler have the right of obtaining a title to the property. Families comprising several settlers entitled to lands, preferring to reside on a single lot, will be exempted from the obligation of building and of residence, (except upon the lot on which they live) provided that the required clearing of the land be made on each lot. The non-accomplishment of these conditions will cause the immediate loss of the assigned lot of land, which will be sold or given to another.

The road having been opened by the Government, the settlers are required to keep it in repair.

The Local Agents, whose names and places of abode have already been given, will furnish every information to the intending Settler.

The LOG-HOUSE required by the Government to be built, is of such a description as can be put up in four days by five men. The neighbours generally help to build the Log-cabin for newly arrived Settlers, without charge, and when this is done the cost of the erection is small; the roof can be covered with bark, and the spaces between the logs plastered with clay, and white-washed. It then becomes a neat dwelling, and warm as a stone-house.

The Lands thus opened up and offered for settlement, are, in sections of Canada West, capable both as to Soil and Climate, of producing abundant crops of winter wheat, of excellent quality and full weight, and also crops of every other description of farm produce, grown in the best and longest cultivated districts of that portion of the Province, and fully as good.

There are, of course, in such a large extent of country as that referred to, great varieties in the character and quality of land—some lots being much superior to others; but there is an abundance of the very best land for farming purposes. The Lands in the neighborhood of these three roads will be found to be very similar in quality and character, and covered with every variety of Timber—some with hard wood, and some with heavy pine.

Water for domestic use is every where abundant; and there are, throughout, numerous streams and falls of water, capable of being used for Manufacturing purposes.

The heavy timbered land is almost always the best, and of it, the ashes of three acres—well taken care of and covered from wet,—will produce a Barrel of Potash, worth from £6 to £7 currency. The capital required to manufacture Potash is very small, and the process is very simple and easily understood.

The expense of clearing and enclosing heavily Timbered Lands, valuing the labor of the settler at the highest rate, is about FOUR POUNDS Currency per Acre, which the first wheat crop, if an average one, will nearly repay. The best timber for fencing is to be had in abundance.

A Settler on these lands, possessing a

capital of from £25 to £50, according to the number of his family, will soon make himself comfortable, and obtain a rapid return for his investment. The single man, able and willing to work, needs little capital, besides his own arm and axe—he can devote a portion of the year to clearing his land, and in the numerous lumbering establishments, he can, at other seasons, obtain a liberal remuneration for his labor.

The climate throughout these Districts is essentially good. The snow does not fall so deep as to obstruct communication; and it affords material for good roads during the winter, enabling the farmer to haul in his Firewood for the ensuing year from the woods, to take his produce to market, and to lay in his supplies for the future—and this covering to the earth, not only facilitates communication with the more settled parts of the District, but is highly beneficial and fertilizing to the soil.

In all the localities above named, wherever Settlers have surplus produce, there is a good market for it near to them—farm produce of all kinds being in great demand by the Lumber or Timber Merchants, who are carrying on extensive operations through-not these parts of the country.

According to the ratio of progress which Canada West has made during the last ten years, the value of property on an average doubles within that period; irrsepective of any improvements which may have been made by the Settlers.

In many Counties the value of Land, once opened for settlement has increased FIVE-FOLD in the period named, but the average value of such land, according to the statistics of Canada West DOUBLES EVERY TEN YEARS in the mere lapse of time, exclusive of any expenditure thereon—and it is not too much to expect that this ratio will not diminish for generations to come.

The Sections of Country opened by these roads lie in and to the Southern part of the Great Ottawa Region, stretching from and beyond them to the shores of Lake Huron, to Lake Nipissing, and to the Ottawa River—an immense extent of country whose resources are now seeking and will rapidly obtain development.

THE OTTAWA COUNTRY, lying south of Lake Nipissing and of the great River Ottawa, and embracing a large portion of the land offered for settlement, is capable of sustaining a population of EIGHT MILLIONS OF PEOPLE, and it is now attracting general attention, as the more western portions of Canada are being rapidly filled up;

The Parliament of Canada in its last Session, incorporated a company for the construction of a Railway to pass through this Ottawa country from the Shores of Lake Huron to the City of the Ottawa, and thence Eastward.

A survey of the River Ottawa and the neighbouring Country has been undertaken, and will be completed in the present year: its principal object being to ascertain by what means the River Ottawa can be rendered navigable and connected with Lake Huron so as to enable vessels to pass by that route from the most Western Waters into the River St. Lawrence and the Ocean. These projected works are alluded to, in order to show that the attention of the Government, Parliament and People of Canada has been fixed upon this important portion of the Province.

P. M. VANKOUGHNET,
Minister of Agriculture, &c.

Crown Lands Department.

TORONTO, 31st May, 1856.

NOTICE is hereby given that the undermentioned Crown Lands, in the Township of WOODBRIDGE, in the County of Kamouraska, L.C., will be open for Sale to actual settlers upon application to FLORENCE DEGUISE, Esquire, at Ste. Anne de la Pocatière, on and after the THIRD day of JULY next, at One Shilling and Six Pence per acre, under the regulations of the 6th August 1852:

TOWNSHIP OF WOODDRIDGE.

3rd Range.

Lot 48 (100), 49 (46).

4th Range.

Lot 1 (122 acres), 2 to 15 incl. (100 a. each), 16 to 25 incl. (100 each), 27 to 31 incl. (100 each), 32 and 33 (100 each), 34 (100), 35 and 36 (100 each), 37 (100), 38 (100), 39 to 48 incl. (100 each), 49 (46).

5th Range.

Lot 1 (100 acres) 2 and 3 (100 a. each), 4 to 8 incl, (100 each), 9 and 10 (100 each), 11 and 12 (100 each), 13 to 17 incl. (100 each), 18 to 21 incl. (100 each), 22 (100), 23 (100), 24 to 26 (100 each), 27 to 29 (100 each), 30 to 32 (100 each), 33 to 38 (100 each), 39 (100), 40 to 45 (100 each), 46 to 48 (100 each), 49 (57).

6th Range.

Lots 1 to 21 incl. (100 each), 22 (100), 23 (100), 24 (100), 25 (100), 26 (100), 27 to 38 (100 each), 40 to 47 (100 each), 48 (100), 49 (48).

7th Range.

Lots 1 to 48 incl. (100 each), 49 (42).

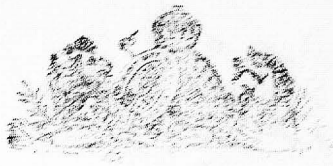
8th Range.

Lots 1 to 13 incl. (100 each,) 14 (89), 15 (93), 16 to 48 (100 each), 49 (80).

9th Range.

Lot 1 (71), 2 (65), 3 (66), 4 (67), 5 (68,) 6 (69), 7 (71), 8 (72), 9 (73), 10 (69), 11 (48), 12 (37), 13 (20), 14 (21), 15 (32), 16 (72), 17 (83), 18 (84), 19 (85), 20 (86), 21 (87), 22 (88), 23 (90), 24 (91), 25 (92), 26 (94), 27 and 28 (96 each), 29 (98), 30 (99), 31 (100), 32 (102), 33 (103), 34 (104), 35 (105), 36 (106), 37 (107), 38 (108), 39 (110), 40 (111), 41 (112), 42 (114), 43 (115), 44 (116), 45 (118), 46 (119), 47 (120) 48 (122), 49 (80).

5 ins.



BUREAU OF AGRICULTUE AND STATISTICS,
Toronto, 15th August, 1856.

PRIZE ESSAYS.

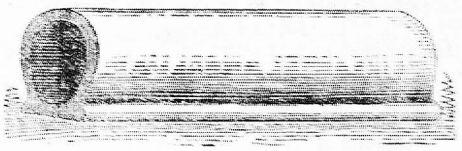
£10. £25. £15.

THE above PREMIUMS will be Paid for the Three Best Essays, respectively, on the Origin, Nature and Habits, and the History of the Progress, from time to time, and the Cause of the Visit, of the Weevil, Hessian Fly, Midge, and such other insects as have made ravages on the Wheat Crops in Canada, and on such Diseases as the Wheat Crops have been subjected to, and on the best means of evading or guarding against them.

The Essay to be furnished to the Bureau by the FIFTEENTH day of JANUARY next, and to be designated by a motto, a copy of which shall be also forwarded in a sealed note with the name and address of the author. The Prizes will be awarded according to the decision of a Committee, to be named by the Board of Agriculture for Upper and Lower Canada, or, in default of any such decision, by the Bureau, the Essays selected to become the property of the Bureau. A premium will only be awarded in case an Essay of sufficient merit is produced.

It is feared that the farmer in his eagerness to produce wheat, is not paying sufficient attention to the danger of over-cropping, and it is hoped the warning, and the information and advice which may be obtained through the Essays sought for, will aid in arresting the great scourges of the wheat.

P. M. VANKOUGHNET,
6 ins. Minister of Agriculture, &c.



Yamaska Pottery and Brick Works.

THE Undersigned is now prepared to receive orders for every description of DRAIN TILES, FLOWER POTS, &c., samples of which can be seen at the Agricultural Warehouse, St. Ann's Hall, over the St. Ann's Market, Montreal.

3 WM. EVANS, Jr.

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TO SELL STEEL PLATE ENGRAVINGS, including the beautifully illustrated Engraving of the "Lord's Prayer and Ten Commandments." An active person with a small capital can mak $50 to $75 per month. For particulars, address

D. H. MULFORD,
4 ins, pd. No. 167, Broadway, New York.

Crown Lands Department.

TORONTO, 29th August, 1856.

NOTICE is hereby given that the undermentioned Crown Lands in the Township of Montcalm, in the Township of Argenteuil, L. C., will be open for sale to actual settlers, on and after the FIRST day of OCTOBER next, on application to GEORGE KAINES, Esquire, the acting local Agent at Grenville, in said County, on the following terms. viz.:

The price to be one shilling and six pence per acre, payable in five equal annual instalments, with interest: the first instalment to be paid upon receiving authority to enter upon the land,—actual occupation to be immediate and continuous,—the land to be cleared at the rate of two acres annually for each hundred acres during the first five years,—a dwelling house, at least sixteen feet by eighteen feet, to be erected,—the timber to be reserved until the land has been paid for in full and patented, and to be subject to any general timber duty thereafter,—a License of occupation, not assignable without permission,—the sale and License of occupation to become null and void in case of neglect or violation of any of the conditions,—the settler to be entitled to obtain a patent upon complying with all the conditions,—not more than two hundred acres to be sold to any one person:—

TOWNSHIP OF MONTCALM.

First Range.

Lot 2 (90), 3 (63), 4 (64), 7 (115), 8 (114), 9 (114), 10 (113), 11 (112), 12 (111), 13 (110), 14 (109), 15 (108), 16 (107), 17 (106). 18 (105), 19 (104), 20 (103), 21 (102), 22 (101), 23 (100), 24 (99) 25 (98) 26 (87), 27 (82), 28 (96), 29 (79), 30 (88), 31 (100), 32 (100), 33 (100), 34 (73), 35 (32), 36 (81), 37 to 54 inc. (100 each.)

Second Range.

Lot 2 (60 acres), 3 (101), 5 (123), 6 (123), 9 to 25 inc. (123 each), 26 (118), 27 (100), 28 (100), 29 (100), 30 (100), 31 (82), 32 (95), 33 (100), 34 (99), 35 (89), 36 to 44 (100 each.)

Third Range.

Lots 3 to 30 inc. (100 each), 31 (82), 32 (97), 33 (86), 34 (76), 35 (32), 36 (85), 37 to 44 (100 each.)

Fourth Range.

Lots 1 to 20 inc. (100 a. ea.), 21 (87), 22 (73), 23 (100), 24 (100), 25 (100), 26 (100), 27 (100). 28 (100), 29 (92), 30 (69), 31 (71) 32 (66), 33 (81), 34 (85), 35 (62), 36 (74).

Fifth Range.

Lot 1 (100 acres), 2 (100), 3 (100), 4 (100), 5 (81), 6 (93), 7 (98), 8 (42), 9 (48), 10 (58), 11 (55), 12 (52), 13 (57), 14 (39), 15 (32), 16 (76), 17 (92), 18 (100), 10 (100), 20 to 28 inc. (100 ea.), 29 (84), 30 (88), 31 (100).

Sixth Range.

Lot 1 (19), 2 (16), 3 (47), 4 (65), 5 (75), 6 (59), 7 (51), 8 (51), 9 (31), 10 (72), 11 (76), 12 (100), 13 (100), 14 (100), 15 (50), 16 (24), 17 (41), 18 (59), 19 (92), 20 to 26 inc. (100 each.)

JOSEPH CAUCHON,
Commissioner.

3 ins.

BUREAU OF AGRICULTURE AND STATISTICS,
Toronto, July 28th, 1856.

HIS EXCELLENCY THE GOVERNOR GENERAL, has been pleased to approve of the method of distribution of the LAND IMPROVEMENT FUND, prescribed by the Order in Council herewith, published, in the hope that a judicious and economical management thereof may be thereby insured.

A Circular from the Department will be received by the Head of each Municipality, stating the amount at the disposal of such Municipality.

As the best season of the year for making improvements to which the Fund is applicable is close at hand, it is recommended that the preparations for the appropriation of the Money be made as soon as possible.

The Order in Council is as Follows:—

It is ordered that the Funds derived from the sales of Lands in each particular Township, or other Municipality, and applicable to the purposes of the Fund formed under the 14th Section of the Act 16 Vic. Ch. 159, and not already apportioned, be applied to the making, maintaining, altering, or improving of the Roads or Bridges in each of those Townships, or other Municipalities, respectively, and be for this purpose, distributed and disposed of by and through the Municipal Council of each such Township or other Municipality. Each such Council to report to the Bureau of Agriculture the manner of Expenditure of all such Monies on the FIRST DAY of JANUARY and JULY, in each year, and at any intermediate time within ten days after having been called upon so to do, by that Department.

Certified,
W. H. LEE, C. E. C.
P. M. VANKOUGHNET,
Minister of Agriculture.

6 ins.

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